SPACE SCIENCE FICTION

MARCH 1953 35c

IN THIS ISSUE

THE WORSHIPPERS
BY DAMON KNIGHT
WILLIAM MORRISON



SPACE SCIENCE FICTION MARCH 1953

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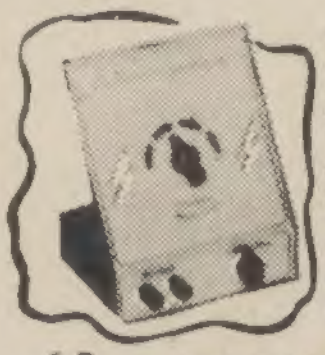
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AN EDITORIAL ON

REINCARNATION

Once upon a time, science-fiction dealt with atomic power, television, rockets, and ray-guns. Lately, it seems to have become more fascinated with such things as telepathy, teleportation by mental power, levitation, etc. This may be good or bad, depending on how close to the physical sciences you want to stay, and how strong a mystical bent you may have.

But it seems a little odd that in a form of fiction which now deals with such things as levitation and poltergeists so little attention has been paid to other fields of occult speculation.

One of the most fascinating subjects of all time has been prophecy, of course—the ability to foresee the future. This has been covered in detail. But very little attention has been given to reincarnation. One story only has touched on it in any detail, to my knowledge, and even H. Beam Piper didn't try to find any explanation—he merely accepted it for story purposes.

How come this hasn't been brought into the field of the *psiences*? Surely it has claimed more attention from the mystics than any of the other fields now being explored! And surely it should be obvious that this is simply the opposite of what is usually considered clairvoyance (a politer name for prophecy)!

We even have some proof of it, apparently. There was a woman in England who used to fall into a trance and dictate whole passages of a book which she had never read, but which had been written long before. There was the long Lemurian "memory" of Richard Shaver, which as many accepted as now seriously accept the flying saucers. True, none of these had absolutely rigorous proof—but neither, so far, has telepathy. Just as in the case of the other mental "factors," there is some evidence that should keep us from dismissing the idea completely, without due thought.

And there's really nothing so complicated to it, after all. If we can accept "time-binding" of the future and the present by someone's mind, as in the case of clairvoyance, why can't that time-binding effect occur between the past and the present?

Mamie Schockins begins to dream about Cleopatra. She has unusually vivid dreams, and they don't entirely fit with what she has read. She goes to the library and bones up, and finds that she was right, as

revealed by the better scholars. Now, since she's dreaming that she was Cleopatra, and since her dreams are accurate, it seems logical that she's remembering directly what happened. A-ha! Mamie, then, must have been Cleopatra, at one time.

To Mamie, there is no question. She wants to believe that she is immortal, of course; and she'd like to believe that she was better once than now. So she grafts a mobile soul onto her vague thoughts of hereafter, and comes up with reincarnation. When she finds others have believed in it, she's convinced.

Obviously, all that is needed to explain it without mysticism—other than our old friend extra sensory preception through time—is to assume that she's a telepath through the past, and is simply reading the thoughts of Cleopatra.

Now, we can go even further. Mamie finally begins to be Cleopatra, even when awake. She recounts things, she assumes poses, she declares she is Cleopatra. She can't speak Egyptian—or Greek, the official language of the court—so most people call her a fake. In time, when she completely goes into her Cleopatra role, someone comes along, labels her a schizophrenic, and locks her up in an institution, and begins giving her shock treatments. Naturally, after that, she loses part of her powers, no longer can remember Cleopatra, and is pronounced cured.

All along—as any student of the future of psichology can see—Mamie was simply better at remembering the past. And she overdeveloped her power at time-binding, until she could become and was being more Cleopatra than herself. Her only insanity lay in considering herself the literal spiritually immortal Cleopatra, instead of merely a clever reader of Cleo's mind.

A very handy explanation, you will notice. It not only furnishes full and clear reasons for the fact that most of the world believes in reincarnation; it also helps to explain why some people apparently go crazy, and then gives an obvious solution for the puzzling fact that shocking the brain "cures" people of such delusions.

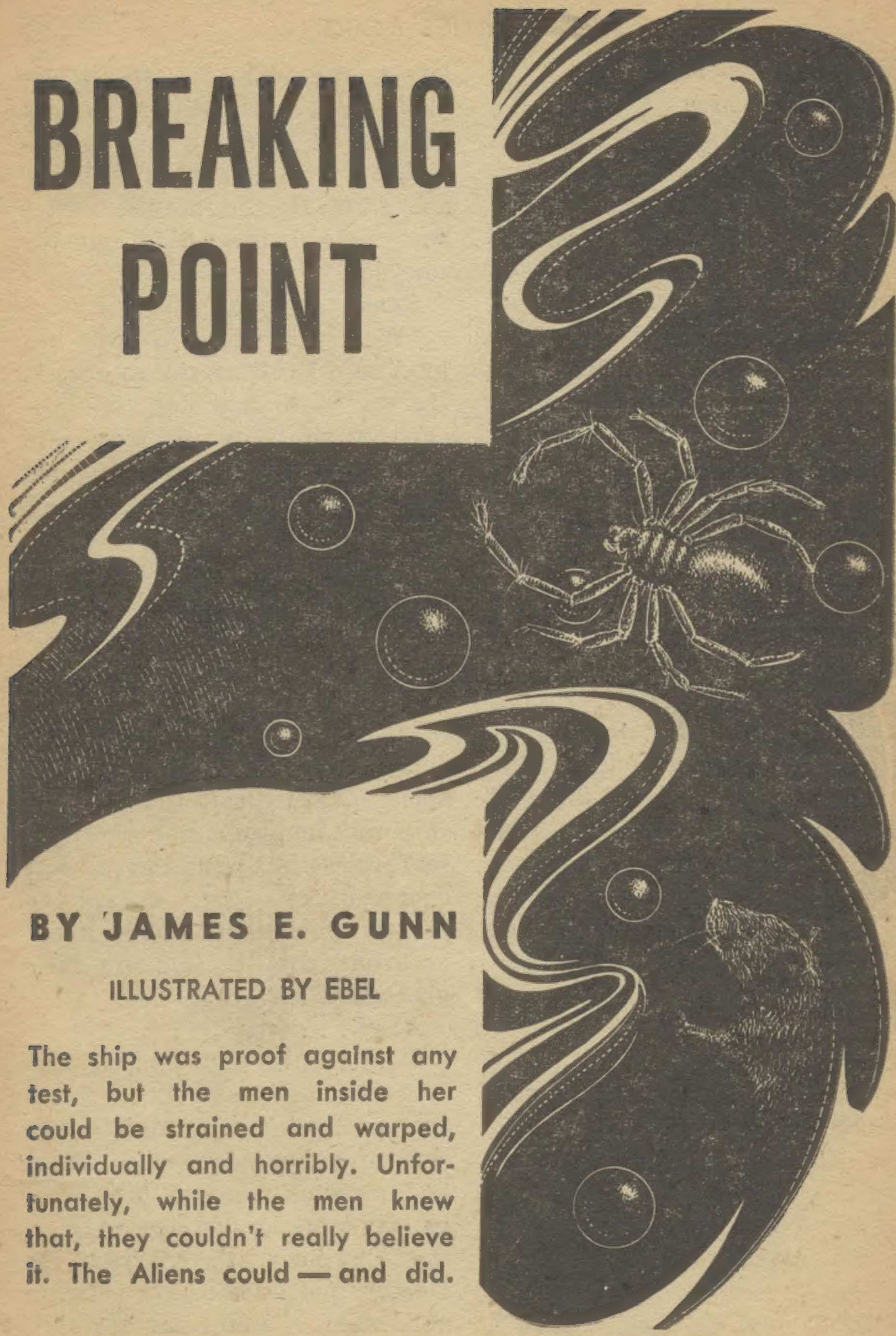
And it's every bit as scientific as most of the psi-explanations being used in today's stories!

That doesn't mean that we're against *psi* stories here; we're happy to have the Smith yarn in this issue. We're simply pointing out the fact that the *psi* factor is being used without enough examination of all the possibilities. We'd love to see a good story of a man who could reincarnate—in this sense—at will. But even more, we'd love to see some gimmick deriving from the *psi* factor which hasn't been thought of yet. Any bright ideas, gentlemen?

LESTER DEL REY



BREAKING POINT



BY JAMES E. GUNN

ILLUSTRATED BY EBEL

The ship was proof against any test, but the men inside her could be strained and warped, individually and horribly. Unfortunately, while the men knew that, they couldn't really believe it. The Aliens could — and did.

They sent the advance unit out to scout the new planet in the Ambassador, *homing down on the secret beeping of a featureless box dropped by an earlier survey party. Then they sat back at GHQ and began the same old pattern of worry that followed every advance unit.*

Not about the ship. The Ambassador *was a perfect machine, automatic, self-adjusting, self-regulating. It was built to last and do its job without failure under any and all conditions, as long as there was a universe around it. And it could not fail. There was no question about that.*

But an advance unit is composed of men. The factors of safety are indeterminable; the duplications of their internal mechanisms are conjectural, variable. The strength of the unit is the sum of the strengths of its members. The weakness of the unit can be a single small failing in a single man.

Beep . . . boop . . .

"Gotcha!" said Ives. Ives was Communications. He had quick eyes, quick hands. He was huge, almost gross, but graceful. "On the nose," he grinned, and turned up the volume.

Beep . . . boop . . .

"What else do you expect?" said Johnny. Johnny was the pilot—young, wide, flat. His movements were as controlled and decisive as those of the ship itself, in which he had an unshakeable faith. He slid into the bucket seat before the great master console.

Beep . . . boop . . .

"We expect the ship to do her job," said Hoskins, the Engineer. He was mild and deft, middle-aged, with a domed head and wide, light-blue eyes behind old fashioned spectacles. He shared Johnny's belief in the machine, but through understanding rather than through admiration. "But it's always good to see her do it."

Beep . . . boop . . .

"Beautiful," said Captain Anderson softly, and he may have been talking about the way the ship was homing in on the tiny, featureless box that Survey had dropped on the unexplored planet, or about the planet itself, or even about the smooth integration of his crew.

Beep . . . boop . . .

Paresi said nothing. He had eyebrows and nostrils as sensitive as a radarscope, and masked eyes of a luminous black. Faces and motives were to him what gauges and log-entries were to the Engineer. Paresi was the Doctor, and he had many a salve and many a splint for invisible ills. He saw everything and

undertsood much. He leaned against the bulkhead, his gaze flicking from one to the other of the crew. Occasionally his small mustache twitched like the antennae of a cat watching a bird.

Barely audible, faint as the blue outline of a distant hill, hungry and lost as the half-heard cry of a banshee, came the thin sound of high atmosphere against the ship's hull.

An hour passed.

Bup-bup-bup-bup . . .

"Shut that damned thing off!"

Ives looked up at the pilot, startled. He turned the gain down to a whisper. Paresi left the bulkhead and stood behind Johnny. "What's the matter?" he asked. His voice was feline, too —a sort of purr.

Johnny looked up at him quickly, and grinned. "I can put her down," he said. "That's what I'm here for. I—like to think maybe I'll get to do it, that's all. I can't think that with the autopilot blasting out an 'on course'." He punched the veering-jet controls. It served men perfectly. The ship ignored him, homed on the beam. The ship computed velocity, altitude, gravity, magnetic polarization, windage; used and balanced and adjusted for them all. It adjusted for interference from the manual controls. It served men perfectly. It ignored them utterly.

Johnny turned to look out and downward. Paresi's gaze followed. It was a beautiful planet, perhaps a shade greener than the blue-green of earth. It seemed, indefinably, more park-like than wild. It had an air of controlled lushness and peace.

The braking jets thundered as Johnny depressed a control. Paresi nodded slightly as he saw the pilot's hand move, for he knew that the autopilot had done it, and that Johnny's movement was one of trained reflex. The youngster was intense and alert, hair-trigger schooled, taught to pretend in such detail that the pretense was reality to him; a precise pretense that would become reality for all of them if the machine failed.

But of course the machine would not fail.

Fields fled beneath them, looking like a crazy-quilt in pastel. On them, nothing moved. Hoskins moved to the viewport and watched them mildly. "Very pastoral," he said. "Pretty."

"They haven't gotten very far," said Ives.

"Or they've gotten very far indeed," said Captain Anderson.

Johnny snorted. "No factories. No bridges. Cow-tracks and goat paths."

The Captain chuckled. "Some

cultures go through an agrarian stage to reach a technological civilization, and some pass through technology to reach the pastoral."

"I don't see it," said Johnny shortly, eyes ahead.

Paresi's hand touched the Captain's arm, and the Captain then said nothing.

Pwing-g-g!

"Stand by for landing," said the Captain.

Ives and Hoskins went aft to the shock-panels in the after bulkhead. Paresi and the Captain stepped into niches flanking the console. Johnny touched a control that freed his chair in its hydraulic gimbals. Chair and niches and shock-panels would not be needed as long as the artificial gravity and inertialess field functioned; it was a ritual.

The ship skimmed treetops, heading phlegmatically for a rocky bluff. A gush of flame from its underjets and it shouldered heavily upward, just missing the jagged crest. A gout of fire forward, another, and it went into a long flat glide, following the fall of a foothill to the plain beyond. It held course and reduced speed, letting the ground billow up to it rather than descending. There was a moment of almost-flight, almost-sliding, and then a rush of dust and smoke which overtook and passed them. When it cleared, they were part of the plain, part of the planet.

"A good landing, John," Paresi said. Hoskins caught his eye and frowned. Paresi grinned broadly, and the exchange between them was clear: *Why do you needle the kid?* and *Quiet, Engine-room. I know what I'm doing.* Hoskins shrugged, and, with Ives, crossed to the communications desk.

Ives ran his fat, skilled hands over the controls and peered at his indicators. "It's more than a good landing," he grunted. "That squeak-box we homed in on can't be more than a hundred meters from here. First time I've ever seen a ship bullseye like that."

Johnny locked his gimbals, ran a steady, sensitive hand over the turn of the console as if it were a woman's flank: "Why—how close do you usually come?"

"Planetfall's close enough to satisfy Survey," said the Captain. "Once in a while the box will materialize conveniently on a continent. But this—this is too good to be true. We practically landed on it."

Hoskins nodded. "It's usually buried in some jungle, or at the bottom of a sea. But this is really all right. What a lineup! Point nine-eight earth gravity, Earth-type atmosphere—"

"Argon-rich," said Ives, from the panel. "Very rich."

"That'll make no real difference," Hoskins went on. "Temperature, about normal for an early summer back home . . . looks as if there's a fiendish plot afoot here to make things easy for us."

Paresi said, as if to himself, "I worry about easy things."

"Yeah, I know," snorted Johnny, rising to stretch. "The head-shrinker always does it the hard way. You can't just dislike rice pudding; it has to be a sister-syndrome. If the shortest distance is from here to there, don't take it—remember your Uncle Oedipus."

Captain Anderson chuckled. "Cut your jets, Johnny. Maybe Paresi's tortuous reasoning does seem out of order on such a nice day. But remember—eternal vigilance isn't just the price of liberty, as the old books say. It's the price of existence. We know we're here—but we don't know where 'here' is, and won't until after we get back. This is *really* Terra Incognita. The location of Earth, or even of our part of the galaxy, is something that has to be concealed at all costs, until we're sure we're not going to turn up a potentially dangerous, possibly superior alien culture. What we don't know can't hurt Earth. No conceivable method could get that information out of us, any more than it could be had from the squeak-box that Survey dropped here.

"Base all your thinking on that, Johnny. If that seems like leaning over backwards, it's only a sample of how careful we've got to be, how many angles we've got to figure."

"Hell," said the pilot. "I know all that. I was just ribbing the bat-snatcher here." He thumbed a cigarette out of his tunic, touched his lighter to it. He frowned, stared at the lighter, tried it again. "It doesn't work. *Damn* it!" he barked explosively, "I don't like things that don't work!"

Paresi was beside him, catlike, watchful. "Here's a light. Take it easy, Johnny! A bum lighter's not that important."

Johnny looked sullenly at his lighter. "It doesn't work," he muttered. "Guaranteed, too. When we get back I'm going to feed it to Supply." He made a vivid gesture to describe the feeding technique, and jammed the lighter back into his pocket.

"Heh!" Ives' heavy voice came from the communications desk. "Maybe the natives are primitives, at that. Not a whisper of any radio on any band. No powerline fields, either. These are plowboys, for sure."

Johnny looked out at the sleeping valley. His irritation over the

lighter was still in his voice. "Imagine that. No video or trideo. No jet-races or feelies. What do people do with their time in a place like this?"

"Books," said Hoskins, almost absently. "Chess. Conversation."

"I don't know what chess is, and conversation's great if you want to tell somebody something, like 'bring me a steak'," said Johnny. "Let's get out of this fire-trap," he said to the Captain.

"In time," said the Captain. "Ives, DX those radio frequencies. If there's so much as a smell of radiation even from the other side of this planet, we want to know about it. Hoskins, check the landing-suits—food, water, oxygen, radio, everything. Earth-type planet or no, we're not fooling with alien viruses. Johnny, I want you to survey this valley in every way you can and plot a minimum of three take-off vectors."

The crew fell to work, Ives and Hoskins intently, Johnny offhandedly, as if he were playing out a ritual with some children. Paresi bent over a stereomicroscope, manipulating controls which brought in samples of airborne bacteria and fungi and placed them under its objective. Captain Anderson ranged up beside him.

"We could walk out of the ship as if we were on Muroc Port," said Paresi. "These couldn't be more like Earth organisms if they'd been transplanted from home to delude us."

The Captain laughed. "Sometimes I tend to agree with Johnny. I never met a more suspicious character. How'd you ever bring yourself to sign your contract?"

"Turned my back on a couple of clauses," said Paresi. "Here—have a look."

At that moment the usually imperturbable Ives uttered a sharp grunt that echoed and re-echoed through the cabin. Paresi and the Captain turned. Hoskins was just coming out of the after alleyway with an oxygen bottle in his hand, and had frozen in his tracks at the sharp sound Ives had made. Johnny had whipped around as if the grunt had been a lion's roar. His back was to the bulkhead, his lean, long frame tensed for fight or flight. It was indescribable, Ives' grunt, and it was the only sound which could have had such an effect on such a variety of men—the same shocked immobility.

Ives sat over his Communications desk as if hypnotized by it. He moved one great arm forward, almost reluctantly, and turned a knob.

A soft, smooth hum filled the room. "Carrier," said Ives.

Then the words came. They were English words, faultlessly spoken, loud and clear and precise. They were harmless words, pleasant words even.

They were: *"Men of Earth! Welcome to our planet."*

The voice hung in the air. The words stuck in the silence like insects wriggling upon a pin. Then the voice was gone, and the silence was complete and heavy. The carrier hum ceased. With a spine-tingling brief blaze of high-frequency sound, Hoskins' oxygen-bottle hit the steel deck.

Then they all began to breathe again.

"There's your farmers, Johnny," said Paresi.

"Knight to bishop's third," said Hoskins softly.

"What's that?" demanded Johnny.

"Chess again," said the Captain appreciatively. "An opening gambit."

Johnny put a cigarette to his lips, tried his lighter. "Damn. Gimme a light, Ives."

Ives complied, saying over his big shoulder to the Captain, "In case you wondered, there was no fix on that. My direction-finders indicate that the signal came simultaneously from forty-odd transmitters placed in a circle around the ship which is their way of saying 'I dunno'."

The Captain walked to the view bubble in front of the console and peered around. He saw the valley, the warm light of mid-afternoon, the too-green slopes and the blue-green distances. Trees, rocks, a balancing bird.

"It doesn't work," muttered Johnny.

The Captain ignored him. "*'Men of Earth. . .'*" he quoted. "Ives, they've gotten into Survey's squeak-box and analyzed its origin. They know all about us!"

"They don't because they can't," said Ives flatly. "Survey traverses those boxes through second-order space. They materialize near a planet and drop in. No computation on earth or off it could trace their normal-space trajectory, let alone what happens in the second-order condition. The elements the box is made of are carefully averaged isotopic forms that could have come from any of nine galaxies we know about and probably more. And all it does is throw out a VUHF signal that says *beep* on one side, *boop* on the other, and *bup-bup* in between. It does *not* speak English, mention the planet Earth, announce anyone's arrival and purpose, or teach etiquette."

Captain Anderson spread his hands. "They got it from somewhere. They didn't get it from

us. This ship and the box are the only Terran objects on this planet. Therefore they got their information from the box."

"Q.E.D. You reason like Euclid," said Paresi admiringly. "But don't forget that geometry is an artificial school, based on arbitrary axioms. It just doesn't work where the shortest distance is *not* a straight line . . . I'd suggest we gather evidence and postpone our conclusions."

"How do you think they got it?" Ives challenged.

"I think we can operate from the fact they got it, and make our analyses when we have more data."

Ives went back to his desk and threw a switch.

"What are you doing?" asked the Captain.

"Don't you think they ought to be answered?"

"Turn it off, Ives."

"But—"

"Turn it off!" Ives did. An expedition is an informal, highly democratic group, and can afford to be, for when the situation calls for it, there is never any question of where authority lies. The Captain said, "There is nothing we can say to them which won't yield them more information. Nothing. For all we know it may be very important to them to learn whether or not we received their message. Our countermove is obviously to make no move at all."

"You mean just sit here and wait until they do something else?" asked Johnny, appalled.

The Captain thumped his shoulder. "Don't worry. We'll do something in some other area than communications. Hoskins—are those landing suits ready?"

"All but," rapped Hoskins. He scooped up the oxygen bottle and disappeared.

Paresi said, "We'll tell them something if we *don't* answer."

The Captain set his jaw. "We do what we can, Nick. We do the best we can. Got any better ideas?"

Paresi shrugged easily and smiled. "Just knocking, skipper. Knock everything. Then what's hollow, you know about."

"I should know better than to jump salty with you," said the Captain, all but returning the doctor's smile. "Johnny. Hoskins. Prepare for exploratory patrol."

"I'll go," said Paresi.

"Johnny goes," said the Captain bluntly, "because it's his first trip, and because if he isn't given something to do he'll bust his adrenals. Hoskins goes, because of all of us, the Engineer is most expendable. Ives stays because we need hair-trigger communications. I stay to correlate what goes on outside with

what goes on inside. You stay because if anything goes wrong I'd rather have you fixing the men up than find myself trying to fix you up." He squinted at Paresi. "Does that knock solid?"

"Solid."

"Testing, Johnny," Ives said into a microphone. Johnny's duplicated voice, from the open face-plate of his helmet and from the intercom speaker, said, "I hear you fine."

"Testing, Hoskins."

"If I'd never seen you," said the speaker softly, "I'd think you were right here in the suit with me." Hoskins' helmet was obviously buttoned up.

The two men came shuffling into the cabin, looking like gleaming ghosts in their chameleon-suits, which repeated the color of the walls. "Someday," growled Johnny, "there'll be a type suit where you can scratch your—"

"Scratch when you get back," said the Captain. "Now hear this. Johnny, you can move fastest. You go out first. Wait in the airlock for thirty seconds after the outer port opens. When Ives gives you the beep, jump out, run around the bows and plant your back against the hull directly opposite the port. Hold your blaster at the ready, aimed down—you hear me? *Down*, so that any observer will know you're armed but not attacking. Hoskins, you'll be in the lock with the outer port open by that time. When Johnny gives the all clear, you'll jump out and put your back against the hull by the port. Then you'll both stay where you are until you get further orders. Is that clear?"

"Aye."

"Yup."

"You're covered adequately from the ship. Don't fire without orders. There's nothing you can get with a blaster that we can't get first with a projector—unless it happens to be within ten meters of the hull and we can't depress to it. Even then, describe it first and await orders to fire except in really extreme emergency. A single shot at the wrong time could set us back a thousand years with this planet. Remember that this ship isn't called *Killer* or *Warrior* or even *Hero*. It's the Earth Ship *Ambassador*. Go to it, and good luck."

Hoskins stepped back and waved Johnny past him. "After you, Jets."

Johnny's teeth flashed behind the face-plate. He clicked his heels and bowed stiffly from the waist, in a fine burlesque of an ancient courtier. He stalked past Hoskins and punched the button which controlled the airlock.

They waited. Nothing.

Johnny frowned, jabbed the button again. And again. The Captain started to speak, then fell watchfully silent. Johnny reached toward the button, touched it, then struck it savagely. He stepped back then, one foot striking the other like that of a clumsy child. He turned partially to the others. In his voice, as it came from the speaker across the room, was a deep amazement that rang like the opening chords of a prophetic and gloomy symphony.

He said, "The port won't open."

II

The extremes of mysticism and of pragmatism have their own expressions of worship. Each has its form, and the difference between them is the difference between deus ex machina *and* deus machina est.

—*E. Hunter Waldo*

"Of course it will open," said Hoskins. He strode past the stunned pilot and confidently palmed the control.

The port didn't open.

Hoskins said, "Hm?" as if he had been asked an inaudible question, and tried again. Nothing happened. "Skipper," he said over his shoulder, "Have a quick look at the meters behind you there. Are we getting auxiliary power?"

"All well here," said Anderson after a glance at the board. "And no shorts showing."

There was a silence punctuated by the soft, useless clicking of the control as Hoskins manipulated it. "Well, what do you know."

"It won't work," said Johnny plaintively.

"Sure it'll work," said Paresi swiftly, confidently. "Take it easy, Johnny."

"It won't work," said Johnny. "It won't work." He stumbled across the cabin and leaned against the opposite bulkhead, staring at the closed port with his head a little to one side as if he expected it to shriek at him.

"Let me try," said Ives, going to Hoskins. He put out his hand.

"*Don't!*" Johnny cried.

"Shut up, Johnny," said Paresi.

"All right, Nick," said Johnny. He opened his face plate, went to the rear bulkhead, keyed open an acceleration couch, and lay face down on it. Paresi watched him, his lips pursed.

"Can't say I blame him," said the Captain softly, catching Paresi's eye. "It's something of a shock. This shouldn't *be*. The safety factor's too great—a thousand per cent or better."

"I know what you mean," said Hoskins. "I saw it myself, but I don't believe it." He pushed the button again.

"I believe it." said Paresi.

Ives went to his desk, clicked the transmitter and receiver switches on and off, moved a rheostat or two. He reached up to a wall toggle, turned a small air-circulating fan on and off. "Everything else seems to work," he said absently.

"This is ridiculous!" exploded the Captain. "It's like having your keys home, or arriving at the theater without your tickets. It isn't dangerous—it's just stupid!"

"It's dangerous," said Paresi.

"Dangerous how?" Ives demanded.

"For one thing—" Paresi nodded toward Johnny, who lay tensely, his face hidden. "For another, the simple calculation that if nothing inside this ship made that control fail, something outside this ship did it. And *that* I don't like."

"That couldn't happen," said the Captain reasonably.

Paresi snorted impatiently. "Which of two mutually exclusive facts are you going to reason from? That the ship can't fail? Then this failure isn't a failure; it's an external control. Or are you going to reason that the ship *can* fail? Then you don't have to worry about an external force—but you can't trust anything about the ship. Do the trick that makes you happy. But do only one. You can't have both."

Johnny began to laugh.

Ives went to him. "Hey, boy—"

Johnny rolled over, swung his feet down, and sat up, brushing the fat man aside. "What you guys need," Johnny chuckled, "is a nice kind policeman to feed you candy and take you home. You're real lost."

Ives said, "Johnny, take it easy and be quiet, huh? We'll figure a way out of this."

"I already have, scrawny," said Johnny offensively. He got up, strode to the port. "What a bunch of deadheads," he growled. He went two steps past the port and grasped the control-wheel which was mounted on the other side of the port from the button.

"Oh my God," breathed Anderson delightedly, "the manual! Anybody else want to be Captain?"

"Factor of safety," said Hoskins, smiting himself on the brow. "There's a manual control for everything on this scow that there can be. And we stand here staring at it—"

"If we don't win the furlined teacup. . ." Ives laughed.

Johnny hauled on the wheel.

It wouldn't budge.

"Here—" Ives began to approach.

"Get away," said Johnny. He put his hands close together on the rim of the wheel, settled his big shoulders, and hauled. With a sharp crack the wheel broke off in his hands.

Johnny staggered, then stood. He looked at the wheel and then up at the broken end of its shaft, gleaming deep below the surface of the bulkhead.

"Oh, fine. . ." Ives whispered.

Suddenly Johnny threw back his head and loosend a burst of high, hysterical laughter. It echoed back and forth between the metal walls like a torrent from a burst dam. It went on and on, as if now that the dam was gone, the flood would run forever.

Anderson called out "Johnny!" three times, but the note of command had no effect. Paresi walked to the pilot and with the immemorial practice slapped him sharply across the cheeks. "Johnny! Stop it!"

The laughter broke off as suddenly as it had begun. Johnny's chest heaved, drawing in breath with great, rasping near-sobs. Slowly they died away. He extended the wheel toward the Captain.

"It broke off," he said finally, dully, without emphasis.

Then he leaned back against the hull, slowly slid down until he was sitting on the deck. "Broke right off," he said.

Ives twined his fat fingers together and bent them until the knuckles cracked. "Now what?"

"I suggest," said Paresi, in an extremely controlled tone, "that we all sit down and think over the whole thing very carefully."

Hoskins had been staring hypnotically at the broken shaft deep in the wall. "I wonder," he said at length, "which way Johnny turned that wheel."

"Counter-clockwise," said Ives. "You saw him."

"I know that," said Hoskins. "I mean, which way: the right way, or the wrong way?"

"Oh." There was a short silence. Then Ives said, "I guess we'll never know, now."

"Not until we get back to Earth," said Paresi quickly.

"You say 'until', or 'unless'?" Ives demanded.

"I said 'until', Ives," said Paresi levelly, "and watch your mouth."

"Sometimes," said the fat man with a dangerous joviality, "you pick the wrong way to say the right thing, Nick." Then he clapped the slender doctor on the back. "But I'll be good. We sow no panic seed, do we?"

"Much better not to," said

the Captain. "It's being done efficiently enough from outside."

"You are convinced it's being done from outside?" asked Hoskins, peering at him owlishly.

"I'm . . . convinced of very little," said the Captain heavily. He went to the acceleration couch and sat down. "I want out," he said. He waved away the professional comment he could see forming on Paresi's lips and went on, "Not claustrophobia, Nick. Getting out of the ship's more important than just relieving our feelings. If the trouble with the port is being caused by some fantastic *something* outside this ship, we'll achieve a powerful victory over it, purely by ignoring it."

"It broke off," murmured Johnny.

"Ignore *that*," snorted Ives.

"You keep talking about this thing being caused by something outside," said Paresi. His tone was almost complaining.

"Got a better hypothesis?" asked Hoskins.

"Hoskins," said the Captain, "isn't there some way we can get out? What about the tubes?"

"Take a shipyard to move those power-plants," said Hoskins, "and even if it could be done, those radioactive tubes would fry you before you crawled a third of the way."

"We should have a lifeboat," said Ives to no one in particular.

"What in time does a ship like the *Ambassador* need with a lifeboat?" asked Hoskins in genuine amazement.

The Captain frowned. "What about the ventilators?"

"Take us days to remove all the screens and purifiers," said Hoskins, "and then we'd be up against the intake ports. You could stroll out through any of them about as far as your forearm. And after that it's hull-metal, skipper. *That* you don't cut, not with a piece of the Sun's core."

The Captain got up and began pacing, slowly and steadily, as if the problem could be trodden out like ripe grapes. He closed his eyes and said, "I've been circling around that idea for thirty minutes now. Look: the hull can't be cut because it is built so it can't fail. It doesn't fail. The port controls were also built so they wouldn't fail. They do fail. The thing that keeps us in stays in shape. The thing that lets us out goes bad. Effect: we stay inside. Cause: sómething that wants us to stay inside."

"Oh," said Johnny clearly.

They looked at him. He raised his head, stiffened his spine against the bulkhead. Paresi smiled at him. "Sure, Johnny.

The machine didn't fail. It was—controlled. It's all right." Then he turned to the Captain and said carefully, "I'm not denying what you say, Skipper. But I don't like to think of what will happen if you take that tack, reason it through, and don't get any answers."

"I'd hate to be a psychologist," said Ives fervently. "Do you extrapolate your mastications, too, and get frightened of the stink you might get?"

Paresi smiled coldly. "I control my projections."

Captain Anderson's lips twitched in passing amusement, and then his expression sobered. "I'll take the challenge, Paresi. We have a cause and an effect. Something is keeping us in the ship. Corollary: We—or perhaps the ship—we're not welcome."

"*Men of Earth,*" quoted Ives, in an excellent imitation of the accentless English they had heard on the radio, "*welcome to our planet,*"

"They're kidding," said Johnny heartily, rising to his feet. He dropped the control wheel with a clang and shoved it carelessly aside with his foot. "Who ever says exactly what they mean anyhow? I see that conclusion the head-shrinker's afraid you'll get to, Skipper. If we can't leave the ship, the only other thing we can do is to leave the planet. That it?"

Paresi nodded and watched the Captain closely. Anderson turned abruptly away from them all and stood, feet apart, head down, hands behind his back, and stared out of the forward viewports. In the tense silence they could hear his knuckles crack. At length he said quietly, "That isn't what we came here for, Johnny."

Johnny shrugged. "Okay. Chew it up all you like, fellers. The only other choice is to sit here like bugs in a bottle until we die of old age. When you get tired of thinking that over, just let me know. I'll fly you out."

"We can always depend on Johnny," said Paresi with no detectible emphasis at all.

"Not on me," said Johnny, and swatted the bulkhead. "On the ship. Nothing on any planet can stop this baby once I pour on the coal. She's just got too much muscles."

"Well, Captain?" asked Hoskins softly.

Anderson looked at the basking valley, at the too-blue sky and the near-familiar, mellow-weathered crags. They waited.

"Take her up," said the Captain. "Put her in orbit at two hundred kilos. I'm not giving up this easily."

Ives swatted Johnny's broad

shoulder. "That's a take-off *and* a landing, if I know the Old Man. Go to it, Jets."

Johnny's wide white grin flashed and he strode to the control chair. "Gentlemen, be seated."

"I'll take mine lying down," said Ives, and spread his bulk out on the acceleration couch. The others went to their take-off posts.

"On automatics," said the Captain, "Fire away!"

"Fire away!" said Johnny cheerfully. He reached forward and pressed the central control.

Nothing happened.

Johnny put his hand toward the control again. It moved as if there were a repellor field around the button. The hand moved more and more slowly the closer it got, until it hovered just over the control and began to tremble.

"On manual," barked the Captain. "Fire!"

"Manual, sir," said Johnny reflexively. His trembling hand darted up to an overhead switch, pulled it. He grasped the control bars and dropped the heels of his hands heavily on the firing studs. From somewhere came a muted roar, a whispering; a subjective suggestion of the thunder of reaction motors.

A frown crossed Paresi's face. The rocket noise was gone as the mind reached for it, like an occluded thought. The motors were silent; there wasn't a tremor of vibration. Yet somewhere a ghost engine was warming up, preparing a ghost ship for an intangible take-off into nothingness.

He snapped off the catch of his safety belt and crossed swiftly and silently to the console. Johnny sat raptly. A slow smile of satisfaction began to spread over his face. His gaze flicked to dials and gauges; he nodded very slightly, and brought both hands down like an organist playing a mighty chord. He watched the gauges. The needles were still, lying on their zero pins, and where lights should have flickered and flashed there was nothing. Paresi glanced at Anderson and met a worried look. Hoskins had his head cocked to one side, listening, puzzled. Ives rose from the couch and came forward to stand beside Paresi.

Johnny was manipulating the keys firmly. His fingers began to play a rapid, skillful, silent concerto. His face had a look of intense concentration and of complete self-confidence.

"Well," said Ives heavily. "That's a bust, too."

Paresi spun to him. "*Shh!*" It was done with such intensity that Ives recoiled. With a warning look at him. Paresi walked

to the Captain, whispered in his ear.

"My God," said Anderson. "All right, Doctor." He came forward to the pilot's chair. Johnny was still concentratedly, uselessly at work. Anderson glanced inquiringly at Paresi, who nodded.

"That does it," said the Captain, loudly. "Nice work, Johnny. We're smack in orbit. The automatics couldn't have done it better. For once it feels good to be out in space again. Cut your jets now. You can check for correction later."

"Aye, sir," said Johnny. He made two delicate adjustments, threw a master switch and swung around. "Whew! That's work!"

Facing the four silent men, Johnny thumbed out a cigarette, put it in his mouth, touched his lighter to it, drew a long slow puff.

"Man, that goes good. . . ."

The cigarette was not lighted. Hoskins turned away, an expression of sick pity on his face. Ives reached abruptly for his own lighter, and the doctor checked him with a gesture.

"Every time I see a hot pilot work I'm amazed," Paresi said conversationally. "Such concentration . . . you must be tuckered, Johnny."

Johnny puffed at his unlit cigarette. "Tuckered," he said. "Yeah." There were two odd undertones to his voice suddenly. They were fatigue, and eagerness. Paresi said, "You're off-watch, John. Go stretch out."

"Real tired," mumbled Johnny. He lumbered to his feet and went aft, where he rolled to the couch and was almost instantly asleep.

The others congregated far forward around the controls, and for a long moment stared silently at the sleeping pilot.

"I don't get it," murmured Ives.

"He really thought he flew us out, didn't he?" asked Hoskins.

Paresi nodded. "Had to. There isn't any place in his cosmos for machines that don't work. Contrary evidence can get just so strong. Then, for him, it ceased to exist. A faulty cigarette lighter irritated him, a failing airlock control made him angry and sullen and then hysterical. When the drive controls wouldn't respond, he reached his breaking point. Everyone has such a breaking point, and arrives at it just that way if he's pushed far enough."

"Everyone?"

Paresi looked from face to face, and nodded somberly. Anderson asked, "What knocked him out? He's trained to take far more strain than that."

"Oh, he isn't suffering from any physical or conscious mental

fatigue. The one thing he wanted to do was to get away from a terrifying situation. He convinced himself that he flew out of it. The next best thing he could do to keep anything else from attacking him was to sleep. He very much appreciated my suggestion that he was worn out and needed to stretch out."

"I'd very much appreciate some such," said Ives. "Do it to me, Nick."

"Reach your breaking point first," said the doctor flatly, and went to place a pillow between Johnny's head and a guard-rail.

Hoskins turned away to stare at the peaceful landscape outside. The Captain watched him for a moment, then: "Hoskins!"

"Aye."

"I've seen that expression before. What are you thinking about?"

The engineer looked at him, shrugged, and said mildly, "Chess."

"What, especially?"

"Oh, a very general thing. The reciprocity of the game. That's what makes it the magnificent thing it is. Most human enterprises can gang up on a man, slap him with one disaster after another without pause. But not chess. No matter who your opponent might be, every time he does something to you, *it's your move.*"

"Very comforting. Have you any idea of how we move now?"

Hoskins looked at him, a gentle surprise on his aging face. "You missed my point, Skipper. *We* don't move."

"Oh," the Captain whispered. His face tautened as it paled. "I . . . I see. We pushed the airlock button to get out. Countermove: It wouldn't work. We tried the manual. Countermove: It broke off. And so on. Now we've tried to fly the ship out. Oh, but Hoskins—Johnny broke. Isn't that countermove enough?"

"Maybe. Maybe you're right. Maybe the move wasn't trying the drive controls, though. Maybe the move was to do what was necessary to knock Johnny out." He shrugged again. "We'll very soon see."

The Captain exhaled explosively through his nostrils. "We'll find out if it's our move by moving," he gritted. "Ives! Paresi! We're going to go over this thing from the beginning. First, try the port. You, Ives."

Ives grunted and went to the ship's side. Then he stopped.

"Where is the port?"

Anderson and Paresi followed Ives' flaccid, shocked gaze to the bulkhead where there had been the outline of the closed port, and beside it the hole which had held the axle of the manual wheel, and which now was a

smooth, seamless curtain of impenetrable black. But Hoskins looked at the Captain first of all, and he said "*Now* it's our move," and only then did he turn with them to look at the darkness.

III

The unfamiliar, you say, is the unseen, the completely new and strange? Not so. The epitome of the unfamiliar is the familiar inverted, the familiar turned on its head. View a familiar place under new conditions—a deserted and darkened theater, an empty night club by day—and you will find yourself more influenced by the emotion of strangeness than by any number of unseen places. Go back to your old neighborhood and find everything changed. Come into your own home when everyone is gone, when the lights are out and the furniture rearranged—there I will show you the strange and frightening ghosts that are the shapes left over when reality superimposes itself upon the images of memory. The goblins lurk in the shadows of your own room. . .

Owen Miller
Essays on Night and
the Unfamiliar

For one heart-stopping moment the darkness had seemed to swoop in upon them like the clutching hand of death. Instinctively they had huddled together in the center of the room. But when the second look, and the third, gave them reassurance that the effect was really there, though the cause was still a mystery, then half the mystery was gone, and they began to drift apart. Each felt on trial, and held tight to himself and the picture of himself he empathized in the others' eyes.

The Captain said quietly, "It's just . . . there. It doesn't seem to be spreading."

Hoskins gazed at it critically. "About half a meter deep," he murmured. "What do you suppose it's made of?"

"Not a gas," said Paresi. "It has a—a sort of surface."

Ives, who had frozen to the spot when first he saw the blackness on his way to the port, took another two steps. The hand which had been half lifted to touch the control continued upward relievedly, as if glad to have a continuous function even though its purpose had changed.

"Don't touch it!" rapped the Captain.

Ives turned his head to look at the Captain, then faltered and let the hand drop. "Why not?"

"Certainly not a liquid," Paresi mused, as if there had been

no interruption. "And if it's a solid, where did that much matter come from? Through the hull?"

Hoskins, who knew the hull, how it was made, how fitted, how treated once it was in place, snorted at the idea.

"If it was a gas," said Paresi, "there'd be diffusion. *And* convection. If it were poisonous, we'd all be dead. If not, the chances are we'd smell it. And the counter's not saying a thing —so it's not radioactive."

"You trust the counter?" asked Ives bitterly.

"I trust it," said Paresi. His near-whisper shook with what sounded like passion. "A man must have faith in something. I hold that faith in every single function of every part of this ship until each and every part is separately and distinctly proved unworthy of faith!"

"Then, by God, you'll understand my faith in my own two hands and what they feel," snarled Ives. He stepped to the bulkhead and brought his meaty hand hard against it.

"*Touché,*" murmured Hoskins, and meant either Ives' remark or the flat, solid smack of the hand against the blackness.

In his sleep, Johnny uttered a high, soft, careless tinkle of youthful, happy laughter.

"Somebody's happy," said Ives.

"Paresi," said the Captain, "what happens when he wakes up?"

Paresi's eyebrows shrugged for him. "Practically anything. He's reached down inside himself, somewhere, and found a way out. For him—not for any of the rest of us. Maybe he'll ignore what we see. Maybe he'll think he's somewhere else, or in some other time. Maybe he'll *be* someone else. Maybe he won't wake up at all."

"Maybe he has the right idea," said Ives.

"That's the second time you've made a crack like that," said Paresi levelly. "Don't do it again. You can't afford it."

"We can't afford it," the Captain put in.

"All right," said Ives, with such docility that Paresi shot him a startled, suspicious glance. The big communications man went to his station and sat, half-turned away from the rest.

"What are they after?" complained the Captain suddenly. "What do they want?"

"Who?" asked Paresi, still watching Ives.

Hoskins explained, "Whoever it was who said 'Welcome to our planet.' "

Ives turned toward them, and Paresi's relief was noticeable.

Ives said, "They want us dead."

"Do they?" asked the Captain.

"They don't want us to leave the ship, and they don't want the ship to leave the planet."

"Then it's the ship they want."

"Yeah," amended Ives, "without us."

Paresi said, "You can't conclude that, Ives. They've inconvenienced us. They've turned us in on ourselves, and put a drain on our intangible resources as men and as a crew. But so far they haven't actually done anything to us. We've done it to ourselves."

Ives looked at him scornfully. "We wrecked the unwreckable controls, manufactured that case-hardened darkness, and talked to ourselves on an all-wave carrier with no source, about information no outsider could get?"

"I didn't say any of that." Paresi paused to choose words. "Of course they're responsible for these phenomena. But the phenomena haven't hurt us. Our reactions to the phenomena are what has done the damage."

"A fall never hurt anyone, they told me when I was a kid," said Ives pugnaciously. "It's the sudden stop."

Paresi dismissed the remark with a shrug. "I still say that while we have been astonished, frightened, puzzled and frustrated, we have not been seriously threatened. Our water and food and air are virtually unlimited. Our ability to live with one another under emergency situations has been tested to a fare-thee-well, and all we have to do is recognize the emergency as such and that ability will rise to optimum." He smiled suddenly. "It could be worse, Ives."

"I suppose it could," said Ives. "That blackness could move in until it really crowded us, or—"

Very quietly Hoskins said, "It *is* moving in."

Captain Anderson shook his head. "No. . ." And hearing him, they slowly recognized that the syllable was not a denial, but an exclamation. For the darkness was no longer a half-meter deep on the bulkhead. No one had noticed it, but they suddenly became aware that the almost-square cabin was now definitely rectangular, with the familiar controls, the communications wall, and the thwartship partition aft of them forming three sides to the encroaching fourth.

Ives rose shaking and round-eyed from his chair. He made an unspellable animal sound and rushed at the blackness. Paresi leaped for him, but not fast enough. Ives collided sickeningly against the strange jet surface



and fell. He fell massively, gracelessly, not prone but on widespread knees, with his arms crumpled beneath him and the side of his face on the deck. He stayed there, quite unconscious, a gross caricature of worship.

There was a furiously active, silent moment while Paresi turned the fat man over on his back, ran skilled fingers over his bleeding face, his chest, back to the carotid area of his neck. "He's all right," said Paresi, still working; then, as if to keep his mind going with words to avoid conjecture, he went on didactically, "This is the other fear reaction. Johnny's was 'flight.' Ives' is 'fight.' The empirical result is very much the same."

"I thought," said Hoskins dryly, "that fight and flight were survival reactions."

Paresi stood up. "Why, they are. In the last analysis, so is suicide."

"I'll think about that," said Hoskins softly.

"Paresi!" spat Anderson. "Medic or no, you'll watch your mouth!"

"Sorry, Captain. That *was* panic seed. Hoskins—"

"Don't explain it to me," said the engineer mildly. "I know what you meant. Suicide's the direct product of survival compulsions—drives that try to save something, just as fight and flight are efforts to save something. I don't think you need worry; immolation doesn't tempt me. I'm too—too interested in what goes on. What are you going to do about Ives?"

"Bunk him, I guess, and stand by to fix up that headache he'll wake up to. Give me a hand, will you?"

Hoskins went to the bulkhead and dropped a second acceleration couch. It took all three of them, working hard, to lift Ives' great bulk up to it. Paresi opened the first-aid kit clamped under the control console and went to the unconscious man. The Captain cast about him for something to do, something to say, and apparently found it. "Hoskins!"

"Aye."

"Do you usually think better on an empty stomach?"

"Not me."

"I never have either."

Hoskins smiled. "I can take a hint. I'll rassle up something hot and filling."

"Good man," said the Captain, as Hoskins disappeared toward the after quarters. Anderson walked over to the doctor and stood watching him clean up the abraded bruise on Ives' forehead.

Paresi, without looking up, said, "You'd better say it, whatever it is. Get it out."

Anderson half-chuckled. "You psychic?"

Paresi shot him a glance. "Depends. If you mean has a natural sensitivity to the tension spectra coupled itself with some years of practice in observing people —then yes. What's on your mind?"

Anderson said nothing for a long time. It was as if he were waiting for a question, a single prod from Paresi. But Paresi wouldn't give it. Paresi waited, just waited, with his dark face turned away, not helping, not pushing, not doing a single thing to modify the pressure that churned about in the Captain.

"All right," said the Captain irritably. "I'll tell you."

Paresi took tweezers, a retractor, two scalpels and a hypodermic case out of the kit and laid them in a neat row on the bunk. He then picked up each one and returned it to the kit. When he had quite finished Anderson said, "I was wondering, *who's next?*"

Paresi nodded and shut the kit with a sharp click. He looked up at the Captain and nodded again. "Why does it have to be you?" he asked.

"I didn't say it would be me!" said the Captain sharply.

"Didn't you?" When the Captain had no answer, Paresi asked him, "Then why wonder about a thing like that?"

"Oh . . . I see what you mean. When you start to be afraid, you start to be unsure—not of anyone else's weaknesses, but of your own. That what you mean?"

"Yup." His dark-framed grin flashed suddenly. "But you're not afraid, Cap'n."

"The hell I'm not."

Paresi shook his head. "Johnny was afraid, and fled. Ives was afraid, and fought. There's only one fear that's a real fear, and that's the one that brings you to your breaking point. Any other fear is small potatoes compared with a terror like that. Small enough so no one but me has to worry about it."

"Why you, then?"

Paresi swatted the first-aid kit as he carried it back to its clamp. "I'm the M. O., remember? Symptoms are my business. Let me watch 'em, Captain. Give me orders, but don't crowd me in my specialty."

"You're insubordinate, Paresi," said Anderson, "and you're a great comfort." His slight smile faded, and horizontal furrows appeared over his eyes. "Tell me why I had that nasty little phase of doubt about myself."

"You think I can?"

"Yes." He was certain.

"That's half the reason. The other half is Hoskins."

"What are you talking about?"

"Johnny broke. Ives broke. Your question was, 'who's next?' You doubt that it will be me, because I'm *de facto* the boy with all the answers. You doubt it will be Hoskins, because you can't extrapolate how he might break—or even if he would. So that leaves you."

"I hadn't exactly reasoned it out like that—"

Oh yes you had," said Paresi, and thumped the Captain's shoulder. "Now forget it. Confucius say he who turn gaze inward wind up crosseyed. Can't afford to have a crosseyed Captain. Our friends out there are due to make another move."

"No they're not."

The doctor and the Captain whirled at the quiet voice. "What does that mean, Hoskins?"

The engineer came into the cabin, crossed over to his station, and began opening and closing drawers. "They've moved." From the bottom drawer he pulled out a folded chessboard and a rectangular box. Only then did he look directly at them. "The food's gone."

"Food? . . . gone where?"

Hoskins smiled tiredly. "Where's the port? Where's the outboard bulkhead? That black stuff has covered it up—heating units, foodlockers, disposal unit, everything." He pulled a couple of chairs from their clips on the bulkhead and carried them across the cabin to the sheet of blackness. "There's water," he said as he unfolded the chairs. On the seat of one he placed the chessboard. He sat on the other and pushed the board close to the darkness. "The scuttlebutt's inboard, and still available." His voice seemed to get fainter and fainter as he talked, as if he were going slowly away from them. "But there's no food. No food."

He began to set up the pieces, his face to the black wall.

IV

The primary function of personality is self-preservation, but personality itself is not a static but a dynamic thing. The basic factor in its development is integration; each new situation calls forth a new adjustment which modifies or alters the personality in the process. The proper aim of personality, therefore, is not permanence and stability, but unification. The inability of a personality to adjust to or integrate a new situation, the resistance of the personality to unification, and its

efforts to preserve its integrity are known popularly as insanity.
—Morgan Littlefield,
Notes on Psychology.

"*Hoskins!*"

Paresi grabbed the Captain's arm and spun him around roughly. "Captain Anderson! Cut it!" Very softly, he said, "Leave him alone. He's doing what he has to do."

Anderson stared over his shoulder at the little engineer. "Is he, now? Damn it, he's still under orders!"

"Got something for him to do?" asked the doctor cooly.

Anderson looked around, at the controls, out at the sleeping mountains. "I guess not. But I'd like to know he'd take an order when I have one."

"Leave him alone until you have an order. Hoskins is a very steady head, skipper. But just now he's on the outside edge. Don't push."

The Captain put his hand over his eyes and fumbled his way to the controls. He turned his back to the pilot's chair and leaned heavily against it. "Okay," he said. "This thing is developing into a duel between you and those . . . those colleagues of yours out there. I guess the least we . . . I . . . can do is not to fight you while you're fighting them."

Paresi said, "You're choosing up sides the wrong way. They're fighting us, all right. We're only fighting ourselves. I don't mean each other; I mean each of us is fighting himself. We've got to stop doing that, skipper."

The Captain gave him a wan smile. "Who has, at the best of times?"

Paresi returned the smile. "Drug addicts . . . Catatonics . . . illusionaries . . . and saints. I guess it's up to us to add to the category."

"How about dead people?"

"Ives! How long have you been awake?"

The big man shoved himself up and leaned on one arm. He shook his head and grunted as if he had been punched in the solar plexus. "Who hit me with what?" he said painfully, from between clenched teeth.

"You apparently decided the bulkhead was a paper hoop and tried to dive through it," said Paresi. He spoke lightly but his face was watchful.

"Oooh. . ." Ives held his head for a moment and then peered between his fingers at the darkness. "I remember," he said in a strained whisper. He looked around him, saw the engineer huddled against his chessboard. "What's he doing?"

They all looked at the engineer

as he moved a piece and then sat quietly.

"Hey, Hoskins!"

Hoskins ignored Ives' bull voice. Paresi said, "He's not talking just now. He's . . . all right, Ives. Leave him alone. At the moment, I'm more interested in you. How do you feel?"

"Me, I feel great. Hungry, though. What's for chow?"

Anderson said quickly, "Nick doesn't want us to eat just now."

"Thanks," muttered Paresi in vicious irony.

"He's the doctor," said Ives good-naturedly. "But don't put it off too long, huh? This furnace needs stoking." He fisted his huge chest.

"Well, this is encouraging," said Paresi.

"It certainly is," said the Captain. "Maybe the breaking point is just the point of impact. After that the rebound, hm?"

Paresi shook his head. "Breaking means breaking. Sometimes things just don't break."

"Got to pass," said a voice. Johnny, the pilot, was stirring.

"Ha!" Anderson's voice was exultant. "Here comes another one!"

"How sure are you of that?" asked the doctor. To Johnny, he called, "Hiya, John?"

"I got to pass," said Johnny worriedly. He swung his feet to the deck. "You see," he said earnestly, "being the head of your class doesn't make it any easier. You've got to keep that and pass the examinations too. You've got two jobs. Now, the guy who stands fourth, say—he has only one job to do."

Anderson turned a blank face to Paresi, who made a silencing gesture. Johnny put his head in his hands and said, "When one variable varies directly as another, two pairs of their corresponding values are in proportion." He looked up. "That's supposed to be the keystone of all vector analysis, the man says, and you don't get to be a pilot without vector analysis. And it makes no sense to me. What am I going to do?"

"Get some shuteye," said Paresi immediately. "You've been studying too hard. It'll make more sense to you in the morning."

Johnny grinned and yawned at the same time, the worried wrinkles smoothing out. "Now that was a real educational remark, Martin, old chap," he said. He lay down and stretched luxuriously. "*That* I can understand. You may wear my famous maroon zipsuit." He turned his face away and was instantly asleep.

"Who the hell is Martin?" Ives demanded. "Martin who?"

"Shh. Probably his roommate in pre-pilot school."

Anderson gaped. "You mean he's back in school?"

"Doesn't it figure?" said Paresi sadly. "I told you that this situation is intolerable to him. If he can't escape in space, he'll escape in time. He hasn't the imagination to go forward, so he goes backward."

Something scuttled across the floor. Ives whipped his feet off the floor and sat like some cartoon of a Buddha, clutching his ankles. "What in God's name was that?"

"I didn't see anything," said Paresi.

The Captain demanded, "What was it?"

From the shadows, Hoskins said, "A mouse."

"Nonsense."

"I can't stand things that scuttle and slither and crawl," said Ives. His voice was suddenly womanish. "Don't let anything like that in here!"

From the quarters aft came a faint scratching, a squeak. Ives turned pale. His wattles quivered.

"Snap out of it, Ives," said Paresi coldly. "There isn't so much as a microbe on this ship that I haven't inventoried. Don't sit there like little Miss Muffet."

"I know what I saw," said Ives. He rose suddenly, turned to the black wall, and bellowed, "Damn you, send something I can fight!"

Two mice emerged from under the couch. One of them ran over Ives' foot. They disappeared aft, squeaking. Ives leapt straight up and came down standing on the couch. Anderson stepped back against the inboard bulkhead and stood rigid. Paresi walked with great purpose to the medical chest, took out a small black case and opened it.

Ives cowered down to his knees and began to blubber openly, without attempting to hide it, without any articulate speech. Paresi approached him; half-concealing a small metal tube in his hand.

A slight movement on the deck caught Anderson's eye. He was unable to control a shrill intake of breath as an enormous spider, hairy and swift, darted across to the couch and sprang. It landed next to Ives' knee, sprang again. Paresi swung at it and missed, his hand catching Ives heavily just under the armpit. The spider hit the deck, skidded, righted itself and, abruptly, was gone. Ives caved in around the impact point of Paresi's hand and curled up silently on the couch. Anderson ran to him.

"He'll be all right now," said Paresi. "Forget it."

"Don't tell me he fainted! Not Ives!"

"Of course not." Paresi held up the little cylinder.

"Anesthox! Why did you use that on him?"

Paresi said irritably, "For the reason one usually uses anesthox. To knock a patient out for a couple of hours without hurting him."

"Suppose you hadn't?"

"How much more of that scuttle-and-slither treatment do you think he could have taken?"

Anderson looked at the unconscious communications man. "Surely more than that." He looked up suddenly. "Where the hell *did* that vermin come from?"

"Ah. Now you have it. He dislikes mice and spiders. But there was something special about these. They couldn't be here, and they were. He felt that it was a deliberate and personal attack. He couldn't have handled much more of it."

"Where did they come from?" demanded the Captain again.

"*I* don't know!" snapped Paresi. "Sorry, skipper . . . I'm a little unnerved. I'm not used to seeing a patient's hallucinations. Not that clearly, at any rate."

"They were Ives' hallucinations?"

"Can you recall what was said just before they appeared?"

"Uh . . . something scuttled. A mouse."

"It wasn't a mouse until someone said it was." The doctor turned and looked searchingly at Hoskins, who still sat quietly over his chess.

"By God, it was Hoskins. Hoskins—what made you say that?"

The engineer did not move nor answer. Paresi shook his head hopelessly. "Another retreat. It's no use, Captain."

Anderson took a single step toward Hoskins, then obviously changed his mind. He shrugged and said, "All right. Something scuttled and Hoskins defined it. Let's accept that without reasoning it out. So who called up the spider?"

"You did."

"*I* did?"

In a startling imitation of the Captain's voice, Paresi quoted, "Don't sit there like Miss Muffet!"

"I'll be damned," said Anderson. "Maybe we'd all be better off saying nothing."

Paresi said bitterly, "You think it makes any difference if we *say* what we think?"

"Perhaps. . ."

"Nup," said Paresi positively. "Look at the way this thing works. First it traps us, and then it shows us a growing darkness. Very basic. Then it starts

picking on us, one by one. Johnny gets machines that don't work, when with his whole soul he worships machines that do. Ives gets a large charge of claustrophobia from the black stuff over there and goes into a flat spin."

"He came out of it."

"Johnny woke up too. In another subjective time-track. Quite harmless to—to Them. So they left him alone. But they lowered the boom on Ives when he showed any resilience. It's breaking point they're after, Captain. Nothing less."

"Hoskins?"

"I guess so," said Paresi tiredly. "Like Johnny he escaped from a problem he couldn't handle to one he could. Only instead of regressing he's turned to chess. I hope Johnny doesn't bounce back for awhile, yet. He's too—Captain! He's gone!"

They turned and stared at Johnny's bunk. Or—where the bunk had been before the black wall had swelled inwards and covered it.

V

". . . and there I was, Doctor, in the lobby of the hotel at noon, stark naked!"

"Do you have these dreams often?"

"I'm afraid so, Doctor. Am I —all right? I mean . . ."

"Let me ask you this question: Do you believe that these experiences are real?"

"Of course not!"

"Then, Madam, you are, by definition, sane; for insanity, in the final analysis, is the inability to distinguish the real from the unreal."

Paresi and the Captain ran aft together, and together they stopped four paces away from the bulging blackness.

"Johnny!" The Captain's voice cracked with the agonized effort of his cry. He stepped to the black wall, pounded it with the heel of his hand.

"He won't hear you," said Paresi bleakly. "Come back, Captain. Come back."

"Why him? Why Johnny? They've done everything they could to Johnny; you said so yourself!"

"Come back," Paresi said again, soothing. Then he spoke briskly: "Can't you see they're not doing anything to him? They're doing it to us!"

The Captain stood rigidly, staring at the featureless intrusion. He turned presently. "To us," he parroted. Then he stumbled blindly to the doctor, who put a firm hand on his biceps and walked with him to the forward acceleration couch.

The Captain sat down heavily with his back to this new invasion. Paresi stood by him reflectively, then walked silently to Hoskins.

The engineer sat over his chess-board in deep concentration. The far edge of the board seemed to be indefinite, lost partially in the mysterious sable curtain which covered the bulkhead.

"Hoskins."

No answer.

Paresi put his hand on Hoskins' shoulder. Hoskins' head came up slowly. He did not turn it. His gaze was straight ahead into the darkness. But at least it was off the board.

"Hoskins," said Paresi, "why are you playing chess?"

"Chess is chess," said Hoskins quietly. "Chess may symbolize any conflict, but it is chess and it will remain chess."

"Who are you playing with?"

No answer.

"Hoskins—we need you. Help us."

Hoskins let his gaze travel slowly downward again until it was on the board. "The word is not the thing," he said. "The number is not the thing. The picture, the ideograph, the symbol—these are not the thing. Conversely. . ."

"Yes, Hoskins."

Paresi waited. Hoskins did not move or speak. Paresi put his hand on the man's shoulder again, but now there was no response. He cursed suddenly, bent and brought up his hand with a violent smash and sent board and pieces flying.

When the clatter had died down Hoskins said pleasantly, "The pieces are not the game. The symbols are not the thing." He sat still, his eyes fixed on the empty chair where the board had been. He put out a hand and moved a piece where there was no piece to a square which was no longer there. Then he sat and waited.

Paresi, breathing heavily, backed off, whirled, and went back to the Captain.

Anderson looked up at him, and there was the glimmer of humor in his eyes. "Better sit down and talk about something different, Doctor."

Paresi made an animal sound, soft and deep, far back in his throat, plumped down next to the Captain, and kneaded his hands together for a moment. Then he smiled. "Quite right, skipper. I'd better."

They sat quietly for a moment. Then the Captain prompted, "About the different breaking point. . ."

"Yes, Captain?"

"Perhaps you can put your

finger on the thing that makes different men break in different ways, for different reasons. I mean, Johnny's case seemed pretty clear cut, and what you haven't explained about Hoskins, Hoskins has demonstrated pretty clearly. About Ives, now —we can skip that for the time he'll be unconscious. But if you can figure out where you and I might break, why—we'd know what to look for."

"You think that would help?"

"We'd be prepared."

Paresi looked at him sharply. "Let's hypothesize a child who is afraid of the dark. Ask him and he might say that there's a *something* in dark places that will jump out at him. Then assure him, with great authority, that not only is he right but that it's about to jump any minute, and what have you done?"

"Damage," nodded the Captain. "But you wouldn't say that to the child. You'd tell him there was nothing there. You'd *prove* there wasn't."

"So I would," agreed the doctor. "But in our case I couldn't do anything of the kind. Johnny broke over machines that really didn't work. Hoskins broke over phenomena that couldn't be measured nor understood. Ives broke over things that scuttled and crawled. Subjectively real phenomena, all of them. Whatever basic terrors hide in you and in me will come to face us, no matter how improbable they might be. And you want me to tell you what they are. No, skipper. Better leave them in your subconscious, where you've buried them."

"I'm not afraid," said the Captain. "Tell me, Paresi! At least I'll know. I'd rather know. I'd so *damn* much rather know!"

"You're sure I can tell you?"

"Yes."

"I haven't psychoanalyzed you, you know. Some of these things are very hard to—"

"You do know, don't you?"

"Damn you, yes!" Paresi wet his lips. "All right, then. I may be doing a wrong thing here. . . You've cuddled up to the idea that I'm a very astute character who automatically knows about things like this, and it's been a comfort to you. Well, I've got news for you. I didn't figure all these things out. I was told."

"Told?"

"Yes, told," said Paresi angrily. "Look, this is supposed to be restricted information, but the Exploration Service doesn't rely on individual aptitude tests alone to make up a crew. There's another factor—call it an inaptitude factor. In its simplest terms, it comes to this: that a crew can't work together only if

each member is the most efficient at his job. He has to *need* the others, each one of the others. And the word *need* predicates *lack*. In other words, none of us is a balanced individual. And the imbalances are chosen to match and blend, so that we will react as a balanced unit. Sure I know Johnny's bugaboos, and Hoskins', and yours. They were all in my indoctrination treatments. I know all your case histories, all your psychic push-buttons."

"And yours?" demanded the Captain.

"Hoskins, for example," said Paresi. "Happily married, no children. Physically inferior all his life. Repressed desire for pure science which produced more than a smattering of a great many sciences and made him a hell of an engineer. High idealistic quotient; self sacrifice. Look at him playing chess, making of this very real situation a theoretical abstraction . . . like leaving a marriage for deep space.

"Johnny we know about. Brought up with never failing machines. Still plays with them as if they were toys, and like any imaginative child, turns to his toys for reassurance. He needs to be a hero, hence the stars. . .

"Ives . . . always fat. Learned to be easy-going, learned to laugh *with* when others were laughing *at*, and bottling up pressures every time it happened. A large appetite. He's here to satisfy it; he's with us so he can eat up the galaxies. . ."

There was a long pause. "Go on," said the Captain. "Who's next? You?"

"You," said the doctor shortly. "You grew up with a burning curiosity about the nature of things. But it wasn't a scientist's curiosity; it was an aesthete's. You're one of the few people alive who refused a subsidized education and worked your way through advanced studies as a crewman on commercial spaceliners. You became one of the youngest professors of philosophy in recent history. You made a romantic marriage and your wife died in childbirth. Since then—almost a hundred missions with E.A.S., refusing numerous offers of advancement. Do I have to tell you what your bugaboo is now?"

"No," said Anderson hoarsely. "But I'm . . . not afraid of it. I had no idea your. . ." He swallowed. ". . . information was that complete."

"I wish it wasn't. I wish I had some things to—wonder about," said Paresi with surprising bitterness.

The Captain looked at him

shrewdly. "Go on with your case histories."

"I've finished."

"No you haven't." When Paresi did not answer, the Captain nudged him. "Johnny, Ives, Hoskins, me. Haven't you forgotten someone?"

"No I haven't," snarled Paresi, "and if you expect me to tell you why a psychologist buries himself in the stars, I'm not going to do it."

"I don't want to be told anything so general," said the Captain. "I just want to know why *you* came out here."

Paresi scowled. The Captain looked away from him and hazarded, "Big frog in a small pond, Nick?"

Paresi snorted.

Anderson asked, "Women don't like you, do they, Nick?"

Almost inaudibly, Paresi said, "Better cut it out, skipper."

Anderson said, "Closest thing to being a mother—is that it?"

Paresi went white.

The Captain closed his eyes, frowned, and at last said, "Or maybe you just want to play God."

"I'm going to make it tough for you," said Paresi between his teeth. "There are several ways you can break, just as there are several ways to break a log—explode it, crush it, saw it, burn it. . . One of the ways is to fight me until you win. Me, because there's no one else left to fight you. So—I won't fight with you. And you're too rational to attack me unless I do. *That* is the thing that will make it tough. If you must break, it'll have to be some other way."

"Is that what I'm doing?" the Captain asked with sudden mildness. "I didn't know that. I thought I was trying to get your own case history out of you, that's all. What are you staring at?"

"Nothing."

There was nothing. Where there had been forward viewports, there was nothing. Where there had been controls, the communication station, the forward acceleration panels and storage lockers; the charts and computers and radar gear—there was nothing. Blackness; featureless, silent, impenetrable. They sat on one couch by one wall, to which was fixed one table. Around them was empty floor and a blackness. The chess-player faced into it, and perhaps he was partly within it; it was difficult to see.

The Captain and the medical officer stared at one another. There seemed to be nothing to say.

VI

For man's sense is falsely asserted to be the standard of

things: on the contrary, all the perceptions, both of the senses and the mind, bear reference to man and not to the universe; and the human mind resembles those uneven mirrors which impart their own properties to different objects . . . and distorts and disfigures them. . . For every one . . . has a cave or den of his own which refracts and discolors the light of nature.

—Sir Francis Bacon
(1561—1626)

It was the Captain who moved first. He went to the remaining bulkhead, spun a dog, and opened a cabinet. From it he took a rack of spare radar parts and three thick coils of wire. Paresi, startled, turned and saw Hoskins peering owlishly at the Captain.

Anderson withdrew some tools, reached far back in the cabinet, and took out a large bottle.

"Oh," said Paresi. "That. . . . I thought you were doing something constructive."

In the far shadows, Hoskins turned silently back to his game. The Captain gazed down at the bottle, tossed it, caught it. "I am," he said. "I am."

He came and sat beside the doctor. He thumbed off the stopper and drank ferociously. Paresi watched, his eyes as featureless as the imprisoning dark.

"Well?" said the Captain pugnaciously.

Paresi's hands rose and fell, once. "Just wondering why."

"Why I'm going to get loopin', stoopin' drunk? I'll tell you why, head-shrinker. Because I want to, that's why. Because I like it. I'm doing something I like because I like it. I'm not doing it because of the inversion of this concealed repression as expressed in the involuted feelings my childhood developed in my attitude toward the sex-life of beavers, see, couch-catechizer old boy? I like it and that's why."

"I knew a man who went to bed with old shoes because he liked it," said Paresi coldly.

The Captain drank again and laughed harshly. "Nothing can change you, can it, Nick?"

Paresi looked around him almost fearfully. "I can change," he whispered. "Ives is gone. Give me the bottle."

Something clattered to the deck at the hem of the black curtain.

" 'S another hallucination," said the Captain. "Go pick up the hallucination, Nicky-boy."

"Not my hallucination," said Paresi. "Pick it up yourself."

"Sure," said the Captain goodnaturedly. He waited while Paresi drank, took back the bottle, tilted it sharply over his mouth. He wiped his lips with the back



of his hand, exhaled heavily, and went to the blackness across the cabin.

"Well, what do you know," he breathed.

"What is it this time?"

Anderson held the thing up. "A trophy, that's what." He peered at it. "*All-American, 2675*. Little statue of a guy holding up a victory wreath. Nice going, little guy." He strode to Paresi and snatched away the bottle. He poured liquor on the head of the figurine. "Have a drink, little guy."

"Let me see that."

Paresi took it, held it, turned it over. Suddenly he dropped it as if it were a red-hot coal. "Oh, dear God. . ."

" 'Smatter, Nick?" The Captain picked up the statuette and peered at it.

"Put it down, put it down," said the doctor in a choked voice. "It's—Johnny. . ."

"Oh it is, it is," breathed the Captain. He put down the statuette gingerly on the table, hesitated, then turned its face away from them. With abrupt animation he swung to Paresi. "Hey! You didn't say it looked like Johnny. You said it *was* Johnny!"

"Did I?"

"Yup." He grinned wolfishly. "Not bad for a psychologist. What a peephole you opened up! Graven images, huh?"

"Shut up, Anderson," said Paresi tiredly. "I told you I'm not going to let you needle me."

"Aw now, it's all in fun," said the Captain. He plumped down and threw a heavy arm across Anderson's shoulders. "Le's be friends. Le's sing a song."

Paresi shoved him away. "Leave me alone. Leave me alone."

Anderson turned away from him and regarded the statuette gravely. He extended the bottle toward it, muttered a greeting, and drank. "I wonder. . ."

The words hung there until Paresi twisted up out of his forlorn reverie to bat them down. "Damn it—*what* do you wonder?"

"Oh," said the Captain jovially, "I was just wondering what you'll be."

"What are you talking about?"

Anderson waved the bottle at the figurine, which called it to his attention again, and so again he drank. "Johnny turned into what he thinks he is. A little guy with a big victory. Hoskins, there, he's going to be a slide-rule, jus' you wait and see. Ol' Ives, that's easy. He's goin' to be a beer barrel, with beer in it. Always did have a head on him, Ives did." He stopped to laugh immoderately at Paresi's dark-

ening face. "Me, I have no secrets no more. I'm going to be a coat of arms—a useless philosophy rampant on a field of stars." He put the open mouth of the bottle against his forehead and pressed it violently, lowered it and touched the angry red ring it left between his eyes. "Mark of the beast," he confided. "Caste mark. Zero, that's me and my whole damn family. The die is cast, the caste has died." He grunted appreciatively and turned again to Paresi. "But what's old Nicky going to be?"

"Don't call me Nicky," said the doctor testily.

"I know," said the Captain, narrowing his eyes and laying one finger alongside his nose. "A ref'rence book, tha's what you'll be. A treatise on the . . . the post-nasal hysterectomy, or how to unbutton a man's prejudices and take down his pride. . . I swiped all that from somewhere. . .

"No!" he shouted suddenly; then, with conspiratorial quiet, he said, "You won't be no book, Nicky boy. Covers aren't hard enough. Not the right type face. Get it?" he roared, and dug Paresi viciously in the ribs. "Type face, it's a witticism."

Paresi bent away from the blow like a caterpillar being bitten by a fire-ant. He said nothing.

"And finally," said the Captain, "you won't be a book because you got . . . no . . . spine." He leapt abruptly to his feet. "Well, what do you know!"

He bent and scooped up an unaccountable object that rested by the nearest shadows. It was a quarter-keg of beer.

He hefted it and thumped it heavily down on the table. "Come on, Nick," he chortled. "Gather ye round. Here's old Ivés, like I said."

Paresi stared at the keg, his eyes stretched so wide open that the lids moved visibly with his pulse. "Stop it, Anderson, you swine. . ."

The Captain tossed him a disgusted glance and a matching snort. From the clutter of radar gear he pulled a screwdriver and a massive little step-down transformer down on its handle. The bung disappeared explosively inside the keg, and was replaced by a gout of white foam. Paresi shrieked.

"Ah, shaddup," growled Anderson. He rummaged until he found a tube-shield. He stripped off a small length of self-welding metal tape and clapped it over the terminal-hole at the closed end of the shield, making it into an adequate mug. He waited a moment while the weld cooled, then tipped the keg until solid beer began to run with the foam. He filled the improvised mug and

extended it toward Paresi.

"Good ol' Ives," he said sentimentally. "Come on, Paresi. Have a drink on Ives."

Paresi turned and covered his face like a frightened woman.

Anderson shrugged and drank the beer. "It's good beer," he said. He glanced down at the doctor, who suddenly flung himself face down across the couch with his head hanging out of sight on the opposite side, from which came the sounds of heaving and choking.

"Poor ol' Nick," said the Captain sadly. He refilled the mug and sat down. With his free hand he patted Paresi's back. "Can't take it. Poor, poor ol' Nick. . ."

After that there was a deepening silence, a deepening blackness. Paresi was quiet now, breathing very slowly, holding each breath, expelling air and lying quiet for three full seconds before each inhalation, as if breathing were a conscious effort —more; as if breathing were the whole task, the entire end of existence. Anderson slumped lower and lower. Each time he blinked his lids opened a fraction less, while the time his eyes stayed closed became a fraction of a second longer. The cabin waited as tensely as the taut pose of the rigid little victory trophy.

Then there was the music. It was soft, grand music; the music of pageantry, cloth-of-gold and scarlet vestments; pendant jewels and multicolored dimness shouldering upward to be lost in vaulted stone. It was music which awaited the accompaniment of whispers, thousands of awed, ritualistic sibilants which would carry no knowable meaning and only one avowed purpose. Soft music, soft, soft; not soft as to volume, for the volume grew and grew, but soft with the softness of clouds which are soft for all their mountain-size and brilliance; soft and living as a tiger's throat, soft as a breast, soft as the act of drowning, and huge as a cloud.

Anderson made two moves: he raised his head, and he spun the beer in his mug so its center surface sank and the bubbles whirled. With his head up and his eyes down he sat watching the bubbles circle and slow.

Paresi rose slowly and went to the center of the small lighted space left to them, and slowly he knelt. His arms came up and out, and his upturned face was twisted and radiant.

Before him in the blackness there was—or perhaps there had been for some time—a blue glow, almost as lightless as the surrounding dark, but blue and physically deep for all that. Its

depth increased rather than its light. It became the ghost of a grotto, the mouth of a nameless Place.

And in it was a person. A . . . *presence.* It beckoned.

Paresi's face gleamed wetly. "Me?" he breathed. "You want —me?"

It beckoned.

"I—don't believe you," said Paresi. "You can't want me. You don't know who I am. You don't know what I am, what I've done. You don't want me. . ." His voice quavered almost to inaudibility. ". . . do you?"

It beckoned.

"Then you know," sang Paresi in the voice of revelation. "I have denied you with my lips, but you know, you know, you know that underneath . . . deep down . . . I have not wavered for an instant. I have kept your image before me."

He rose. Now Anderson watched him.

"You are my life," said Paresi, "my hopes, my fulfillment. You are all wisdom and all charity. Thank you, thank you . . . Master. I give thee thanks oh Lord," he blurted, and walked straight into the blue glow.

There was an instant when the music was an anthem, and then it too was gone.

Anderson's breath whistled out. He lifted his beer, checked himself, then set it down gently by the figurine of the athlete. He went to the place where Paresi had disappeared, bent and picked up a small object. He swore, and came back to the couch.

He sucked his thumb and swore again. "Your thorns are sharp, Paresi."

Carefully he placed the object between the beer keg and the statuette. It was a simple wooden cross. Around the arms and shaft, twisted tightly and biting deeply into the wood, was a thorny withe. "God all mighty, Nick," Anderson said mournfully, "you didn't have to hide it. Nobody'd have minded."

"Well?" he roared suddenly at the blackness, "what are you waiting for? Am I in your way? Have I done anything to stop you? Come on, come on!"

His voice rebounded from the remaining bulkhead, but was noticeably swallowed up in the absorbent blackness. He waited until its last reverberations had died, and then until its memory was hard to fix. He pounded futilely at the couch cushions, glared all about in a swift, intense, animal way. Then he relaxed, bent down and fumbled for the alcohol bottle. "What's the matter with you, out there?" he demanded quietly. "You waiting for me to sober up? You

want me to be myself before you fix me up? You want to know something? *In vino veritas*, that's what. You don't have to wait for me, kiddies. I'm a hell of a lot more me right now than I will be after I get over this." He took the figurine and replaced it on the other side of the keg. "Tha's right, Johnny. Get over on the other side of ol' Beerbelly there. Make room for the old man." To the blackness he said, "Look, I got neat habits, don't leave me on no deck, hear? Rack me up alongside the boys. What is it I'm going to be? Oh yeah. A coat of arms. Hey, I forgot the motto. All righty: this is my motto. '*Sic itur ad astra*' —that is to say, "This is the way to the men's room.' "

Somewhere a baby cried.

Anderson threw his forearm over his eyes.

Someone went "Shh!" but the baby went right on crying.

Anderson said, "Who's there?"

"Just me, darling."

He breathed deeply, twice, and then whispered, "Louise?"

"Of course. *Shh*, Jeannie!"

"Jeannie's with you, Louise? She's all right? You're—all right?"

"Come and see," the sweet voice chuckled.

Captain Anderson dove into the blackness aft. It closed over him silently and completely.

On the table stood an ivory figurine, a quarter-keg of beer, a thorny cross, and a heart. It wasn't a physiological specimen; rather it was the archetype of the most sentimental of symbols, the balanced, cushiony, brilliant red valentine heart. Through it was a golden arrow, and on it lay cut flowers: lilies, white roses, and forget-me-nots. The heart pulsed strongly; and though it pumped no blood, at least it showed that it was alive, which made it, perhaps, a better thing than it looked at first glance.

Now it was very quiet in the ship, and very dark.

VII

. . .We are about to land. The planet is green and blue below us, and the long trip is over. . . . It looks as if it might be a pleasant place to live. . .

A fragment of Old Testament verse has been running through my mind—from Ecclesiastes, I think. I don't remember it verbatim, but it's something like this:

To every thing there is a season, and a time to every purpose under heaven: A time to weep, and a time to laugh; a time to mourn, and a time to dance; A time to get, and a time to lose; a time to keep, and a time to cast away; A time to be

born, and a time to die; a time to plant, and a time to pluck up that which is planted.

For me, anyway, I feel that the time has come. Perhaps it is not to die but something else, less final or more terrible.

In any case, you will remember, I know, what we decided long ago—that a man owes one of two things to his planet, to his race: posterity, or himself. I could not contribute the first—it is only proper that I should offer the second and not shrink if it is accepted. . .

—From a letter by Peter Hoskins to his wife.

In the quiet and the dark, Hoskins moved.

"Checkmate," he said.

He rose from his chair and crossed the cabin. Ignoring what was on the table, he opened a drawer under the parts cabinet and took out a steel rule. From a book rack he lifted down a heavy manual. He sat on the end of the couch with the manual on his knees and leafed through it, smoothing it open at a page of physical measurements. He glanced at the floor, across it to the black curtain, back to the one exposed bulkhead. He grunted, put the book down, and carried his tape to the steel wall. He anchored one end of it there by flipping the paramagnetic control on the tape case, and pulled the tape across the room. At the blackness he took a reading, made a mark.

Then he took a fore-and-aft measurement from a point opposite the forward end of the table to one opposite the after end of the bunk. Working carefully, he knelt and constructed a perpendicular to this line. He put the tape down for the third time, arriving again at the outboard wall of darkness. He stood regarding it thoughtfully, and then unhesitatingly plunged his arm into it. He fumbled for a moment, moving his hand around in a circle, pressing forward, trying again. Suddenly there was a click, a faint hum. He stepped back.

Something huge shouldered out of the dark. It pressed forward toward him, passed him, stopped moving.

It was the port.

Hoskins wiped sweat away from his upper lip and stood blinking into the airlock until the outer port opened as well. Warm afternoon sunlight and a soft, fresh breeze poured in. In the wind was birdsong and the smell of growing things. Hoskins gazed into it, his mild eyes misty. Then he turned back to the cabin.

The darkness was gone. Ives was sprawled on the after couch, apparently unconscious. Johnny

was smiling in his sleep. The Captain was snoring stertorously, and Paresi was curled up like a cat on the floor. The sunlight streamed in through the forward viewports. The manual wheel gleamed on the bulkhead, unbroken.

Hoskins looked at the sleeping crew and shook his head, half-smiling. Then he stepped to the control console and lifted a microphone from its hook. He began to speak softly into it in his gentle, unimpressive voice. He said:

"Reality is what it is, and not what it seems to be. What it seems to be is an individual matter, and even in the individual it varies constantly. If that's a truism, it's still the truth, as true as the fact that this ship cannot fail. The course of events after our landing would have been profoundly different if we had unanimously accepted the thing we knew to be true. But none of us need feel guilty on that score. We are not conditioned to deny the evidence of our senses.

"What the natives of this planet have done is, at base, simple and straightforward. They had to know if the race who built this ship could do so because they were psychologically sound (and therefore capable of reasoning out the building process, among many, many other things) or whether we were merely mechanically apt. To find this out, they tested us. They tested us the way we test steel—to find out its breaking point. And while they were playing a game for our sanity, I played a game for our lives. I could not share it with any of you because it was a game only I, of us all, have experience in. Paresi was right to a certain degree when he said I had retreated into abstraction — the abstraction of chess. He was wrong, though, when he concluded I had been driven to it. You can be quite sure that I did it by choice. It was simply a matter of translating the contactual evidence into an equivalent idea-system.

"I learned very rapidly that when they play a game, they abide by the rules. I know the rules of chess, but I did not know the rules of their game. They did not give me their rules. They simply permitted me to convey mine to them.

"I learned a little more slowly that, though their power to reach our minds is unheard-of in any of the seven galaxies we know about, it still cannot take and use any but the ideas in the forefront of our consciousness. In other words, chess was a possibility. They could be forced to

take a sacrificed piece, as well as being forced to lose one of their own. They extrapolate a sequence beautifully—but they can be outthought. So much for that: I beat them at chess. And by confining my efforts to the chessboard, where I knew the rules and where they respected them, I was able to keep what we call sanity. Where you were disturbed because the port disappeared, I was not disturbed because the disappearance was not chess.

"You're wondering, of course, how they did what they did to us. I don't know. But I can tell you what they did. They empathize—that is, see through our eyes, feel with our fingertips—so that they perceive what we do. Second, they can control those perceptions; hang on a distortion circuit, as Ives would put it, between the sense organ and the brain. For example, you'll find all our fingerprints all around the port control, where, one after the other, we punched the wall and thought we were punching the button.

"You're wondering, too, what I did to break their hold on us. Well, I simply believed what I knew to be the truth; that the ship is unharmed and unchanged. I measured it with a steel tape and it was so. Why didn't they force me to misread the tape? They would have, if I'd done that measuring first. At the start they were in the business of turning every piece of pragmatic evidence into an outright lie. But I outlasted the test. When they'd finished with their whole arsenal of sensory lies, they still hadn't broken me. They then turned me loose, like a rat in a maze, to see if I could find the way out. And again they abided by their rules. They didn't change the maze when at last I attacked it.

"Let me rephrase what I've done; I feel uncomfortable cast as a superman. We five pedestrians faced some heavy traffic on a surface road. You four tried nobly to cross—deaf and blindfolded. You were all casualties. I was not; and it wasn't because I am stronger or wiser than you, but only because I stayed on the sidewalk and waited for the light to change. . .

"So we won. Now. . ."

Hoskins paused to wet his lips. He looked at his shipmates, each in turn, each for a long, reflective moment. Again his gentle face showed the half-smile, the small shake of the head. He lifted the mike.

". . .In my chess game I offered them a minor piece in order to achieve a victory, and they accepted. My interpretation is that they want *me* for further

tests. This need not concern you on either of the scores which occur to you as you hear this. First: The choice is my own. It is not a difficult one to make. As Paresi once pointed out, I have a high idealistic quotient. Second: I am, after all, a very minor piece and the game is a great one. I am convinced that there is no test to which they can now subject me, and break me, that any one of you cannot pass.

"But you must in no case come tearing after me in a wild and thoughtless rescue attempt. I neither want that nor need it. And do not judge the natives severely; we are in no position to do so. I am certain now that whether I come back or not, these people will make a valuable addition to the galactic community.

"Good luck, in any case. If the tests shouldn't prove too arduous, I'll see you again. If not, my only regret is that I shall break up what has turned out to be, after all, a very effective team. If this happens, tell my wife the usual things and deliver to her a letter you will find among my papers. She was long ago reconciled to eventualities.

"Johnny . . . the natives will fix your lighter. . .

"Good luck, good-bye."

Hoskins hung up the microphone. He took a stylus and wrote a line: "*Hear my recording. Pete.*"

And then, bareheaded and unarmed, he stepped through the port, out into the golden sunshine. Outside he stopped, and for a moment touched his cheek to the flawless surface of the hull.

He walked down into the valley.

T. L. SHERRED is back next month, with a story that merits our rare designation as a SPACE SPECIAL. Sherred, of course, is the phenomenal writer whose single story, *E for Effort*, made such a stir that after six years out of the field, his work is still being hotly demanded by the readers. Now, at last, he's given in to the pressure, and his serial, CUE FOR QUIET, will lead off the next issue. When the bidding was over, we wound up with frazzled nerves and a ruined budget—but knowing that the readers would agree it was well worth all the trouble. Like a stick of dynamite, it's a nice, quiet story—until the fuse is lighted! We don't intend to spoil it by describing it in advance; but it's everything we could hope for in a Sherred story—and that's description enough!

STOP LOOK AND DIG

BY GEORGE O. SMITH

ILLUSTRATED BY SMITH

The enlightened days of mental telepathy and ESP should have made the world a better place. But the minute the Rhine Institute opened up, all the crooks decided it was time to go collegiate!

Someone behind me in the dark was toting a needle-ray. The impression came through so strong that I could almost read the filed-off serial number of the thing, but the guy himself I couldn't dig at all. I stopped to look back but the only sign of life I could see was the fast flick of taxicab lights as they crossed an intersection about a half mile back. I stepped into a doorway so that I could think and stay out of the line of fire at the same time.

The impression of the needle-ray did not get any stronger, and that tipped me off. The bird was following me. He was no peace-loving citizen because honest men do not cart weapons with the serial numbers filed off. Therefore the character tailing me was a hot papa with a burner charge labelled "Steve Hammond" in his needler.

I concentrated, but the only impression I could get would have specified ninety-eight men

out of a hundred anywhere. He was shorter than my six-feet-two and lighter than my one-ninety. I could guess that he was better looking. I'd had my features arranged by a blocked drop kick the year before the National Football League ruled the Rhine Institute out because of our use of mentals and perceptives. I gave up trying. I wanted details and not an overall picture of a hotbird carrying a burner.

I wondered if I could make a run for it.

I let my sense of perception dig the street ahead, casing every bump and irregularity. I passed places where I could zig out to take cover in front of telephone poles, and other places where I could zag in to take cover beyond front steps and the like. I let my perception run up the block and by the time I got to the end of my range, I knew that block just as well as if I'd made a practise run in the daytime.

At this point I got a shock. The hot papa was coming up the sidewalk hell bent for destruction. He was a mental sensitive, and he had been following my thoughts while my sense of perception made its trial run up the street. He was running like the devil to catch up with my mind and burn it down per schedule. It must have come as quite a shock to him when he realized that while the mind he was reading was running like hell up the street, the hard old body was standing in the doorway waiting for him.

I dove out of my hiding place as he came close. I wanted to tackle him hard and ask some pointed questions. He saw me as I saw him skidding to an unbalanced stop, and there was the dull glint of metal in his right hand. His needle-ray came swinging up and I went for my armpit. I found time to curse my own stupidity for not having hardware in my own fist at the moment. But then I had my rod in my fist. I felt the hot scorch of the needle going off just over my shoulder, and then came the godawful racket of my ancient forty-five. The big slug caught him high in the belly and tossed him back. It folded him over and dropped him in the gutter while the echoes of my cannon were still racketing back and forth up and down the quiet street.

I had just enough time to dig his wallet, pockets, and billfold before the whole neighborhood was up and out. Sirens howled in the distance and from above I could hear the thin wail of a jetcopter. Someone opened a window and called: "What's going on out there? Cut it out!"



"Tea party," I called back. "Go invite the cops, Tommy."

The window slammed down again. He didn't have to invite the law. It arrived in three ground cruisers and two jet-copter emergency squads that came closing in like a collapsing balloon.

The leader of the squadron was a Lieutenant Williamson whom I'd never met before. But he knew all about me before the 'copter hit the ground. I could almost feel his sense of perception frisking me from the skin outward, going through my wallet and inspecting the Private Operator's license and my Weapon Permit. I found out later that Williamson was a Rhine Scholar with a Bachelor's Degree in Perception, which put him head and shoulders over me. He came to the point at once.

"Any ideas about this, Hammond?"

I shook my head. "Nope," I replied. He looked at one of his men.

The other man nodded. "He's levelling," he said.

"Now look, Hammond," said the lieutenant pointedly, "You're clean and we know it. But hot papas don't go out for fun. Why was he trying to burn you?"

"I wouldn't know. I'm as blank as any perceptive when it comes to reading minds. I was hoping to collect him whole enough to ask questions, but he forced my hand." I looked to where some of the clean-up squad were tucking the corpse into a basket. "It was one of the few times I'd have happily swapped my perception for the ability to read a mind."

The lieutenant nodded unhappily. "Mind telling me why you were wandering around in this neighborhood? You don't belong here, you know."

"I was doing the job that most private eyes do. I was tailing a gent who was playing games off the reservation."

"You've gone into this guy's wallet, of course?"

I nodded. "Sure. He *was* Peter Rambaugh, age thirty, and—"

"Don't bother. I know the rest. I can add only one item that you may not know. Rampaugh was a paid hotboy, suspected of playing with Scarmann's mob."

"I've had no dealings with Scarmann, Lieutenant."

The Lieutenant nodded absently. It seemed to be a habit with him, probably to cover up his thinking-time. Finally he said, "Hammond, you're clean. As soon as I identified you I took a dig of your folder at headquarters. You're a bit rough and fast on that prehistoric cannon of yours, but—"

"You mean you can dig a

folder at central files all the way from here?"

"I did."

Here was a *real* esper for you. I've got a range of about two blocks for good, solid, permanent things like buildings and streetcar tracks, but unfamiliar things get foggy at about a half a block. I can dig lethal machinery coming in my direction for about a block and a half because I'm a bit sensitive about such things. I looked at Lieutenant Williamson and said, "With a range like yours, how come there's any crime in this town at all?"

He shook his head slowly. "Crime doesn't out until it's committed," he said. "You'll remember how fast we got here after you pulled the trigger. But you're clean, Hammond. Just come to the inquest and tell all."

"I can go?"

"You can go. But just to keep you out of any more trouble, I'll have one of the jetcopters drop you off at home. Mind?"

"Nope. But isn't that more than the police are used to doing?

He eyed me amusedly. "If I were a mental," he said, "I could read your mind and know that you were forming the notion of calling on Scarmann and asking him what-for. But since I'm only a mind-blank esper, all I can do is to fall back on experience and guesswork. Do I make myself clear?"

Lieutenant Williamson's guesswork and experience were as good as mental sensitivity, but I didn't think it wise to admit that I had been considering just exactly how to get to Scarmann. I was quickly and firmly convoyed home in a jetcopter but once I saw them take off I walked out of the apartment again.

I had more or less tacitly agreed not to go looking for Scarmann, but I had not mentioned taking a dig at the apartment of the dear departed, Peter Rambaugh.

Rambaugh's place was uptown and the front door was protected by an eight tumbler cylinder job that would have taxed the best of esper lockpicks. But there was a service entrance in back that was not locked and I took it. The elevator was a self-service job, and Rambaugh's back door was locked on a snaplatch that a playful kitten could have opened. I dug the place for a few minutes and found it clean, so I went in and took a more careful look.

The desk was not particularly interesting. Just papers and letters and unpaid bills. The dresser in the bedroom was the same, excepting for the bottom drawer. That was filled with a fine collection of needle-rays and stunguns

and one big force blaster that could blow a hole in a brick wall. None of them had their serial numbers intact.

But behind a reproduction of a Gainsborough painting was a wall safe that must have been built before Rhine Institute discovered the key to man's latent abilities. Inside of this tin can was a collection of photographs that must have brought Rambaugh a nice sum in the months when the murder business went slack. I couldn't quite dig them clear because I didn't know any of the people involved, and I didn't try too hard because there were some letters and notes that might lead me into the answer to why Rambaugh was hotburning for me.

I fiddled with the dial for about fifteen minutes, watching the tumblers and the little wheels go around. Then it went click and I turned the handle and opened the door. I was standing there with both hands deep in Rambaugh's safe when I heard a noise behind me.

I whirled and slid aside all in one motion and my hand streaked for my armpit and came out with the forty five. It was a woman and she was carrying nothing more lethal than the fountain pen in her purse. She blanched when she saw my forty-five swinging towards her middle, but she took a deep breath when I halted it in midair.

"I didn't mean to startle you," she apologized.

"Startle, hell!" I blurted. "You scared me out of my shoes."

I dug her purse. Beside the usual female junk she had a wallet containing a couple of charge-account plates, a driver's license, and a hospital card, all made out to Miss Martha Franklin. Miss Franklin was about twenty-four, and she was a strawberry blonde with the pale skin and blue eyes that goes with the hair. I gathered that she didn't belong there any more than I did.

"I don't, Mr. Hammond," she said.

So Martha Franklin was a mental sensitive.

"I am," she told me. "That's how I came to be here."

"I'm esper. You'll have to explain in words of one syllable because I can't read you."

"I was not far away when you cut loose with that field-piece of yours," she said flatly. "So I read your intention to come here. I've been following you at mental range ever since."

"Why?"

"Because there is something in that safe I want very much."

I looked at her again. She did not look the type to get into awk-

ward situations. She colored slightly and said, "One indiscretion doesn't make a tramp, Mr. Hammond."

I nodded. "Want it intact or burned?" I asked.

"Burned, please," she said, smiling weakly at me for my intention. I smiled back.

On my way to Rambaugh's bedroom I dug the rest of the thug's safe but there wasn't anything there that would give me an inkling of why he was gunning for me. I came back with one of his needle-rays and burned the contents of the safe to a black char. I stirred up the ashes with the nose of the needler and then left it in the safe after wiping it clean on my handkerchief.

"Thank you, Mr. Hammond," she said quietly. "Maybe I can answer your question. Rambaugh was probably after you because of me."

"Huh?"

"I've been paying Rambaugh blackmail for about four years. This morning I decided to stop it, and looked your name up in the telephone book. Rambaugh must have read me do it."

"Ever think of the police?" I suggested.

"Of course. But that is just as bad as not paying off. You end up all over the front pages anyway. You know that."

"There's a lot of argument on both sides," I supposed. "But let's finish this one over a bar. We're crowding our luck here. In the eyes of the law we're just a couple of nasty break-ins."

"Yes," she said simply.

We left Rambaugh's apartment together and I handed Martha into my car and took off.

It struck me as we were driving that mental sensitivity was a good thing in spite of its limitations. A woman without mental training might have every right to object to visiting a bachelor apartment at two o'clock in the morning. But I had no firm plans for playing up to Martha Franklin; I really wanted to talk this mess out and get it squared away. This she could read, so I was saved the almost-impossible task of trying to convince an attractive woman that I really had no designs upon her beautiful white body. I was not at all cold to the idea, but Martha did not seem to be the pushover type.

"Thank you, Steve," she said.

"Thanks for nothing," I told her with a short laugh. "Them's my sentiments."

"I like your sentiments. That's why I'm here, and maybe we can get our heads together and figure something out."

I nodded and went back to my driving, feeling pretty good now.

A man does not dig his own apartment. He expects to find it the way he left it. He digs in the mailbox on his way towards it, and he may dig in his refrigerator to see whether he should stop for beer or whatever else, because these things save steps. But nobody really expects to find trouble in his own home, especially when he is coming in at three o'clock in the morning with a good looking woman.

They were smart enough to come with nothing deadly in their hands. So I had no warning until they stepped out from either side of my front door and lifted me into my living room by the elbows. They hurled me into an easy chair with a crash. When I stopped bouncing, one of the gorillas was standing in front of me, about as tall as Washington Monument as seen from the sidewalk in front. He was looking at my forty-five with careful curiosity.

"What gives?" I demanded.

The crumb in front of me leaned down and gave me a back-and-forth that yanked my head around. I didn't say anything, but I thought how I'd like to meet the buzzard in a dark alley with my gun in my fist.

Martha said, "They're friends of Rambaugh, Steve. And they're a little afraid of that prehistoric cannon you carry."

The bird in front of Martha gave her a one-two across the face. That was enough for me. I came up out of my chair, lifting my fist from the floor and putting my back and thigh muscles behind it. It should have taken his head off, but all he did was grunt, stagger back, dig his heels in, and then come back at me with his head down. I chopped at the bridge of his nose but missed and almost broke my hand on his hard skull. Then the other guy came charging in and I flung out a side-chop with my other hand and caught him on the wrist.

But Rhine training can't do away with the old fact that two big tough men can wipe the floor with one big tough man. I didn't even take long enough to muss up my furniture.

I had the satisfaction of mashing a nose and cracking my hand against a skull again before the lights went out. When I came back from Mars, I was sitting on a kitchen chair facing a corner. My wrists and ankles were taped to the arms and legs of the chair.

I dug around. They had Martha taped to another chair in the opposite corner, and the two gorillas were standing in the middle of the room, obviously trying to think.

So was I. There was something

that smelled about this mess. Peter Rambaugh was a mental, and he should have been sensitive enough to keep his take low enough so that it wouldn't drive Martha into thinking up ways and means of getting rid of him. Even so, he shouldn't have been gunning for me, unless there was a lot more to this than I could dig.

"What gives?" I asked sourly.

There was no answer. The thug with my forty-five took out the clip and removed a couple of slugs.

He went into the kitchen and found my pliers and came back teasing one of the slugs out of its casing. The other bird lit a cigarette.

The bird with the cartridge poured the powder from the shell into the palm of my hand. I knew what was coming but I couldn't wiggle my fingers much, let alone turn my hand over to dump out the stuff. The other guy planted the end of the cigarette between my middle fingers and I had to squeeze hard to keep the hot end up. My fingers began to ache almost immediately, and I was beginning to imagine the flash of flame and the fierce wave of pain that would strike when my tired hand lost its pep and let the cigarette fall into that little mound of powder.

"Stop it," said Martha. "Stop it!"

"What do they want?" I gritted.

"They won't think it," she cried.

The bright red on the end of the cigarette grayed with ash and I began to wonder how long it would be before a fleck of hot ash would fall. How long it would take for the ash to grow long and top-heavy and then to fall into the powder. And whether or not the ash would be hot enough to touch it off. I struggled to keep my hands steady, but they were trembling. I felt the cigarette slip a bit and clamped down tight again with my aching fingers.

Martha pleaded again: "Stop it! Let us know what you want and we'll do it."

"Anything," I promised rashly.

Even if I managed to hold that deadly fuse tight, it would eventually burn down to the bitter end. Then there would be a flash, and I'd probably never hold my hand around a gun butt again. I'd have to go looking for this pair of lice with my gun in my left. If they didn't try the same trick on my other hand. I tried to shut my mind on that notion but it was no use. It slipped. But the chances were that this pair of close-mouthed

hotboys had considered that idea before.

"Can you dig 'em Martha?"

"Yes, but not deep enough. They're both concentrating on that cigarette and making mental bets when it will—"

Her voice trailed off. A wisp of ash had dropped and my mental howl must have been loud enough to scorch their minds. It was enough to stop Martha, at any rate. But the wisp of ash was cold and nothing happened except my spine got coldly wet and sweat ran down my face and into my mouth. The palm of my hand was sweating too, but not enough to wet the little pile of powder.

"Look," I said in a voice that sounded like a nutmeg grater, "Rambaugh was a louse and he tried to kill me first. If it's revenge you want—why not let's talk it over?"

"They don't care what you did to Rambaugh," said Martha.

"They didn't come here to practice torture," I snapped. "They want something big. And the only guy I know mixed up with Peter Rambaugh is Scarmann, himself."

"Scarmann?" blurted Martha.

Scarmann was a big shot who lived in a palace about as lush as the Taj Mahal, in the middle of a fenced-in property big enough to keep him out of the mental range of most peepers. Scarmann was about as big a louse as they came but nobody could put a finger on him because he managed to keep himself as clean as a raygunned needle. I was expecting a clip on the skull for thinking the things I was thinking about Scarmann, but it did not come. These guys were used to having people think violence at their boss. I thought a little harder. Maybe if I made 'em mad enough one of them would belt me on the noggin and put me out, and then I'd be cold when that cigarette fell into the gunpowder and ruined my hand.

I made myself a firm, solid promise that if, as, and when I got out of this fix I would find Scarmann, shove the nose of my automatic down his throat through his front teeth and empty the clip out through the top of his head.

Then the hotboy behind me lifted the cigarette from my fingers very gently and squibbed it out in the ashtray, and I got the pitch.

This is the way it is done in these enlightened days. Rhine Institute and the special talents that Rhine developed should and could have made the world a better, brighter place to live in. But I've heard it said and had it proved that the minute someone

comes up with something good, there are a lot of buzzards who turn it bad and make it a foul, rotten medium for their lousy way of life.

No, in these days of mental telepathy and extra sensory perception, crumbs do not erase other crumbs. They just grab some citizen and put him in a box until he is ready to do their dirty work for them.

Guilt? That would be mine. A crime is a crime and the guy who does it is a criminal, no matter how he justifies his act of violence.

The truth? Any court mentalist who waded through that pair of unwashed minds would find no evidence of any open deal with Steve Hammond. Sure, he would find violence there, but the Court is more than well aware of the fact that thinking of an act of violence is not illegal. This Rhine training has been too recent to get the human race trained into the niceties of polite mental behavior. Sure, they'd get a few months or maybe a few years for breaking and entering as well as assault, but after all, they were friends of Rambaugh and this might well be a matter of retaliation, even though they thought Rambaugh was an incompetent bungler.

So if Steve Hammond believed that he could go free with a whole hand by planning to rub out a man named Scarmann, that would be Steve Hammond's crime, not theirs.

They didn't take any chances, even though I knew that they could read my mind well enough to know that I would go through with their nasty little scheme. They hustled Martha into the kitchen, chair and all, and one of them stood there with my paring knife touching her soft throat enough to indent the skin but not enough to draw blood. The other rat untaped me and stood me on my feet.

I hurt all over from the pasting I'd taken, so I took a boiling shower and dressed leisurely. The guy handed me my forty-five, all loaded, as I came out of the bathroom. The other bird hadn't moved a muscle out in the kitchen. His knife was still pressing against Martha's throat. He was still standing pat when I passed out of esper range on the street below.

In pre-Rhine days, a citizen in my pinch would holler for the cops because he couldn't be sure that the crooks would keep their end of the bargain. But Rhine training has produced a real "Honor Among Thieves" so that organized crime can run as fast as organized justice. If I kept my end and they didn't keep theirs,

the word would get around from their own dirty minds that they couldn't keep a bargain. Well, I was going to keep mine for the same reason, even though I am not a thief.

That's the way it's done these days. You get a good esper like me to knock off a sharp mental operator like Scarmann.

The trouble was that I didn't really want Scarmann, I wanted that pair of mental sadists up in my apartment who were holding a knife against Martha's throat. I wanted them, and I wanted Martha Franklin's skin to be happily whole. And if I crossed them now, the only guys that wouldn't play ball with me in the future would be the crooks. Them I could do without.

So if they figured that an esper could take a mental like Scarmann, why couldn't an esper take the pair of them?

All I had to do was to think of something else until I could get my hands on their throats. Sure, they'd follow my mind as soon as they felt my mental waves within range, but if I could really find something interesting enough to occupy my attention—and maybe theirs as well—they could not identify me.

So I went back into the lobby of my apartment and dug into the mailbox of another party, thus identifying myself as the man in three eight four. Then I punched the elevator button for the Fourth and leaned back against the elevator and let my mind wander up through the apartments above.

I violated all the laws against Esping Toms as the elevator oozed upwards. Eventually my sense of perception wandered through my own apartment and I located her lying on the bed, fully dressed. She'd probably been freed lest some esper cop get to wondering why there was a woman taped to a chair in a bachelor's kitchen. I shut my mind like a clam, but I couldn't withdraw my perception too fast. I let it ooze back there like the eyes of a lecherous old man at a burleycue.

I left the elevator at the Fourth and walked up the stairs by reflex, while my mind was positively radiating waves of vulgarity.

My mind managed to identify her as "The girl on the bed" without thinking any name. She was a good looking strawberry blonde with a slender waist and a high bosom and long, slender legs. She was wearing a pair of Dornier shoes with three inch heels that did things to her ankles. Her nylons were size eight and one half, medium length, in that dark shade that

always gives me ideas. Her dress was a simple thing that did not have a store label on it, and so I dug the stitches for a bit and decided that it had been hand made. Someone was a fine dressmaker because it fitted her slender body perfectly. Her petticoat was store type. It was simple and fitted, too, but it had a label from Forresters in the hem. Her bra was a Graceform, size thirty two, medium cup, but the girl on the bed did not have much need for molding, shaping, uplifting, padding or pretense. She was all her and she filled it right to the brim. I let my perception dawdle on the slender ankles, the lissome waist, and the rounded hips.

My door key came out by habit-reflex and entered the keyhole while my sense of perception let them have one last vicarious thrill. The girl on the bed was an honest allover strawberry blonde. She. . .

Then the door swung open and hell went out for breakfast.

My forty-five bellowed at the light as I slid in and sloped to one side. The room went dark as I dropped to the floor in front of my bookcase. From across the room a hitburner seared the door and slashed sidewise, cutting a smoking swathe across my encyclopedia from A—AUD to CAN—DAN and then came down as I squirmed aside. It took King Lear right out of Shakespeare before the beam winked out. It went off just in time to keep me from sporting a cooked stripe down my face.

I triggered the automatic again to make a flash in their faces while I dug the room to locate them in the dark. The needle beam flared out again and drilled a hole in the bookcase behind me. The other guy made a slashing motion with his beam to pin me down, but he made a mistake by standing up to do it.

I put a slug in his middle that slammed him back against the wall. He hung there for a moment before he fell to the floor with a dull, limp sound. His needle beam slashed upward and burned the ceiling before his hand went limp and let the weapon drop.

I whirled to dig the other guy in the room just as the throb of a stun-gun beam moaned over my head. I wondered where they'd got the arsenal, dug the serial number, and realized that it was mine. It gave me a chuckle. I'm a pistol man, so the stun-gun that old gorilla-man was toting couldn't have had more than one more charge. I tried to dig it but couldn't. Even a Doctor Of Perception can't really dig the number of kilo-

watt-seconds in a meson chamber.

My accurate esping must have made the other guy desperate, because he made a dive and let his needle ray burn out a slashing beam that zipped across over my head. My forty-five blazed twice. He missed but I didn't, just as the throb of the stun-gun rang the air again. I whirled to face my stun-gun coming out of the bedroom door in front of Martha Franklin.

The slug intended for Martha's body never came out of my gun because her stun-gun got to me first. It froze me like a hunk of Greek statuary and I went forward and toppled over until I came on a three-point landing of elbow, the opposite knee, and the side of my face.

I was as good as dead.

My brain was still functioning but nothing else was. I was completely paralyzed. My heart had stopped breathing and my lungs had stopped breathing, and I've been told that a healthy man can retain consciousness for maybe a minute or so without a fresh supply of blood to the brain. Then things get muddy black and you've had it for good. My esp was still functioning, but that would black out with the rest of Steve Hammond.

There was no physical pain. They could have drilled me with a blunt two-by-four and I'd not have felt it.

Then because I couldn't stare Death in the face, I shut my mind on the fact and esped my late girl friend. She was standing there with my stun-gun in her hand with a smile on her beautiful puss and that vibrant body swaying gently. I wanted to vomit and I would have if I'd not been frozen solid. That beautiful body presided over by that vicious brain made me sick.

Her smile faded as I began to realize the truth. Her story was thin. Rambaugh, a mental, would have been able to play his blackmail game to the fine degree; he would have known when Martha's patience was about to grow short—if Martha's story were true. No blackmailer pushed his victim to the breaking point. And Rambaugh wouldn't have gone for me if this had just been a plain case of blackmail.

No, by thinking deeply, Martha Franklin had engineered the death of Rambaugh and she'd almost engineered the rubbing-out of Scarmann. A mental, Martha Franklin. A high-grade mental, capable of controliing her thoughts so that her cohorts could be led by the mind into doing her dirty work.

My mind chuckled. I'd be gone

before they caught up with Martha, but they'd catch up all right. She'd leave the apartment positively radiating her act of violence and then the cops would have a catch. And you should see how a set of Court Mentalists go to work on a guilty party these days. Once they get the guy that pulled the trigger on the witness stand, in front of a jury consisting of mixed mentals and espers, with no holds barred, the court record gets a full load of the killer's life, adventures, habits, and attitude; just before the guilty party heads for the readjustment chamber.

Things were growing blacker. Waves of darkness clouded my mind and I found it hard to think straight. My esper sense faded first and as it faded I let it run once more over Martha's attractiveness and found my darkening mind wishing that she were the girl I'd believed her to be instead of the female louse she was. It could have been fun.

But now I was about to black out from stun-gun paralysis, and Martha was headed for the readjustment chamber where they'd reduce her mental activity to the level of a menial, sterilize her, and put her to work in an occupation that no man or woman with a spark of intelligence, ambition, or good sense would take. She would live and die a half-robot, alone and ignored, her attractiveness lost because of her own lack-luster mind.

And I'd been willing to go out and plug Scarmann for her.

Hah!

And then she was at my side. I perceived her dimly, inconstantly, through the waves of blackness and unreality that were like the half-dreams that we have when lying a-doze. She levered my frozen body over on its hard back and went to work on my chest. Her arms went around me and she squeezed. Air whooshed into my dead lungs, and then she was beating my breastbone black and blue with her small fists. Beat. Beat-beat. Beat. I couldn't feel a thing but I could dig the fact that she was hurting her hands as she beat on my chest in a rythm that matched the beat of her own heart.

I dug her own heartbeat for her, and she read my mind and matched the beat perfectly.

Then I felt a thump inside of me and dug my own heart. It throbbed once, sluggishly. It struggled, slowly. Then it throbbed to the beat of her hands and the blackening waves went away. My frozen body relaxed and I came down to rest on the floor like a melting lump of sugar.

Martha dropped on top of my

body and pressed me down. Her arms were around my chest as she forced air into my lungs. She beat my ribs sore when my heart faltered, and squeezed me when my breathing slowed. I felt the life coming back into me; it came in like the tide, with a fringe of needles-and-pins that flowed inward from fingers and toes and scalp.

Martha pressed me down on the carpet and kissed me, full, open mouthed, passionate. It stirred my blood and my mind and I took a deep, shuddering breath.

I looked up into her soft blue eyes and said, "Thanks—slut!"

She kissed me again, pressing me down and writhing against me and obviously getting a kick out of my reaction.

Then I came alive and threw her off with no warning. I sat up, and swung a roundhouse right that clipped her on the jaw and sent her rolling over and over. Her eyes glazed for a moment but she came out of it and looked pained and miserable.

"You promised," she said huskily.

"Promised?"

"To kill Scarmann."

"Yeah?"

"You thought how you'd kill Scarmann for me, Steve."

"Someday," I said flatly, "I may kill Scarmann, but it won't be for you!"

She tried to claw me but I clipped her again and this time I made it stick. She went out cold and she was still out like a frozen herring by the time Lieutenant Williamson arrived with his jetcopter squad to take her away.

The last time I saw Martha Franklin, she was still trying to convince twelve Rhine Scholars and True that any woman with a body as beautiful as hers couldn't possibly have committed any crime. She was good at it, but not that good.

Funny. Mental sensitives always think they're so damn superior to anyone else.

STRAIGHT, PLACE AND SHOW

The readers' vote on the November issue shows that A. J. Budrys did very well with his first published story, against major competition

1. MOONWALK, by H. B. Fyfe 2.14
2. WALK TO THE WORLD, by A. J. Budrys 2.23
3. UNTO HIM THAT HATH, by Philip St. John . . . 3.90
4. A*LACK OF VERSIMILITUDE, by Walt Sheldon . . 4.38
5. HERO'S WAY, by Judith Merril 4.76

THE WORSHIPPERS

BY DAMON KNIGHT

ILLUSTRATED BY EMSH

Destiny reached out a hand to Algernon Weaver —but he was a timid man, at first. But on the strange world of Terrranova, there was much to be learned—of destiny, and other things. . . .

It was a very different thing, Algernon Weaver decided, actually to travel in space. When you read about it, or thought about it in terms of what you read, it was more a business of going from one name to another. Algol to Sirius. Aldebaran to Epsilon Ceti. You read the names, and the descriptions that went with them, and the whole thing—although breathtaking in concept, of course, when you really stopped to *meditate* on it—became rather ordinary and prosaic and somehow more understandable.

Not that he had ever approved. No. He had that, at least, to look back upon; he had seen the whole enterprise as pure presumption, and had said so. Often. The heavens were the heavens, and Earth was Earth. It would have been better—*much* better for all concerned—if it had been left that way.

He had held that opinion, he reminded himself gratefully, from the very beginning, when it was easy to think otherwise. Afterward, of course—when the first star ships came back with

the news that space was aswarm with creatures who did not even resemble Man, and had never heard of him, and did not think much of him when they saw him . . . Well, who but an idiot could hold any other opinion?

If only the Creator had not seen fit to make so many human beings in His image but without His common sense. . . .

Well, if He hadn't then for one thing, Weaver would not have been where he was now, staring out an octagonal porthole at an endless sea of diamond-pierced blackness, with the empty ship humming to itself all around him.

It was an entirely different thing, he told himself; there were no names, and no descriptions, and no feeling of going from one known place to another known place. It was more like—

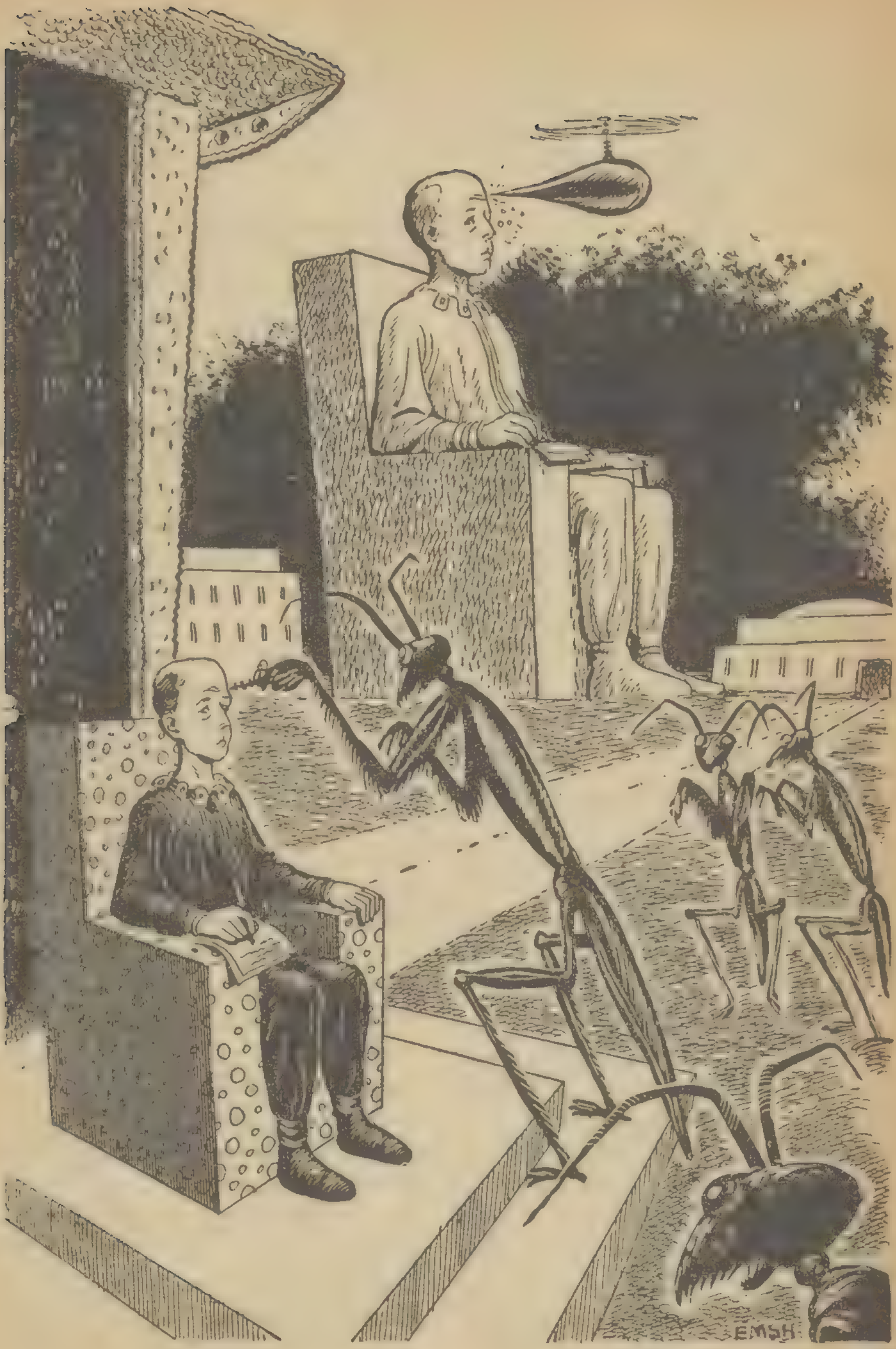
It was like standing outdoors, on a still summer night, and looking up at the dizzying depths of the stars. And then looking down, to discover that there was no planet under your feet—and that you were all alone in that alien gulf. . . .

It was enough to make a grown man cry; and Weaver had cried, often, in the empty red twilight of the ship, feeling himself hopelessly and forever cut off, cast out and forgotten. But as the weeks passed, a kind of numbness had overtaken him, till now, when he looked out the porthole at the incredible depth of sky, he felt no emotion but a thin, disapproving regret.

Sometimes he would describe himself to himself, just to refute the feeling that he was not really here, not really alive. But his mind was too orderly, and the description would come out so cold and terse—"Algernon James Weaver (1942-) historian, civic leader, poet, teacher, philosopher. Author of *Development of the School System in Schenectady and Scoharie Counties, New York* (pamphlet, 1975); *An Address to the Women's Clubs of Schenectady, New York* (pamphlet, 1979); *Rhymes of a Philosopher* (1981); *Parables of a Philosopher* (1983), *Reflections of a Philosopher* (1986). Born in Detroit, Michigan, son of a Methodist minister; educated in Michigan and New York public schools; B. A., New York State University, 1959; M.A., N.Y.S.U. Extension, 1964. Unmarried. Surviving relatives—"

That was the trouble, it began to sound like an obituary. And then the great humming metal shell would begin to feel like a coffin. . .

Presumption. Pure presumption. None of these creatures should have been allowed to get


EMSH

loose among the stars, Man least of all. It cluttered up the Universe. It undermined Faith. And it had got Algernon Weaver into the devil of a fix.

It was his sister's fault, actually. She would go, in spite of his advice, up to the Moon, to the UN sanatorium in Aristarchus. Weaver's sister, a big-framed, definite woman, had a weak heart and seventy-five superfluous pounds of fat. Doctors had told her that she would live twenty years longer on the Moon; therefore she went, and survived the trip, and thrived in the germ-free atmosphere, weighing just one-sixth of her former two hundred and ten pounds.

Once she was there, Weaver could hardly escape visiting her. Harriet was a widow, with large resources, and Weaver was her only near relative. It was necessary, it was prudent, for him to keep on her good side. Moreover, he had his family feeling.

He did not like it, not a minute of it. Not the incredible trip, rising till the Earth lay below like a botched model of itself; not the silent mausoleum of the Moon. But he duly admired Harriet's spacious room in the sanatorium, the recreation rooms, the auditorium; space-suited, he walked with her in the cold Earthlight; he attended her on the excursion trip to Ley Field, the interstellar rocket base on the far side of the Moon.

The alien ship was there, all angles and planes—it came from Zeta Aurigae, they told him, and was the second foreign ship to visit Sol. Most of the crew had been ferried down to Earth, where they were inspecting the people (without approval, Weaver was sure). Meanwhile, the remaining crewman would be pleased to have the sanatorium party inspect *him*.

They went aboard, Harriet and two other women, and six men counting the guide and Weaver. The ship was a red-lit cavern. The "crewman" turned out to be a hairy horror, a three-foot headless lump shaped like an eggplant, supported by four splayed legs and with an indefinite number of tentacles wriggling below the stalked eyes.

"They're more like us than you'd think," said the guide. "They're mammals, they have a nervous organization very like ours, they're susceptible to some of our diseases—which is very rare—and they even share some of our minor vices." He opened his kit and offered the thing a plug of chewing tobacco, which was refused with much tentacle-

waving, and a cigar, which was accepted. The creature stuck the cigar into the pointed tip of its body, just above the six beady black eyes, lit it with some sort of flameless lighter, and puffed clouds of smoke like a volcano.

"—And of course, as you see, they're oxygen breathers," the guide finished. "The atmosphere in the ship here is almost identical to our own—we could breathe it without any discomfort whatever."

Then why don't we? Weaver thought irritably. He had been forced to wear either a breathing mask or a pressure suit all the time he had been on the Moon, except when he had been in his own sealed room at the sanatorium. And his post-nasal drip was unmistakably maturing into a cold; he had been stifling sneezes for the last half hour.

He was roused by a commotion up ahead; someone was on the floor, and the others were crowding around. "Help me carry her," said the guide's voice sharply in his earphones. "We can't treat her here. What is she, a heart case? . . . Good Lord. Clear the way there, will you?"

Weaver hurried up, struck by a sharp suspicion. Indeed, it was Harriet who was being carried out—and a good thing, he thought, that they didn't have to support her full weight. He wondered vaguely if she would die before they got her to a doctor. He could not give the thought his full attention, or feel as much fraternal anxiety as he ought, because—

He had . . . he *had* to sneeze.

The others had crowded out into the red-lit space of the control room, where the airlock was. Weaver stopped and frantically tugged his arm free of the rubberoid sleeve. The repressed spasm was an acute agony in his nose and throat. He fumbled the handkerchief out of his pocket, thrust his hand up under the helmet—and blissfully let go.

His eyes were watering. He wiped them hurriedly, put the handkerchief away, worked his arm back into the sleeve, and looked around to see what had become of the others.

The airlock door was closed, and there was no one in the room but the hairy eggplant shape of the Aurigean, still puffing its cigar.

"Hey!" said Weaver, forgetting his manners. The Aurigean did not turn—but then, which was its front, or back? The beady black eyes regarded him without expression.

Weaver started forward. He got nearly to the airlock before a cluster of hairy tentacles

barred his way. He said indignantly, "Let me out, you monster. Let me out, do you hear?"

The creature stood stock-still in an infuriating attitude until a little light on the wall changed from orange to red-violet. Then it crossed to the control board, did something there, and the inner door of the lock swung open.

"Well, I should think so!" said Weaver. He stepped forward again— But his eyes were beginning to water. There was an intolerable tickling far back in his nostrils. He was going to— he was—

Eyes squeezed shut, his whole body contorted with effort, he raised his arm to begin the desperate race once more. His hand brushed against something—his kit, slung just above his waist. There were handkerchiefs in the kit, he recalled suddenly. And he remembered what the guide had said about Aurigean air.

He tugged the kit open, fumbled and found a handkerchief. He zipped open the closure of his helmet and tilted the helmet back. He brought up the handkerchief, and gave himself over to the spasm.

He was startled by a hoarse boom, as if someone had scraped the strings of an amplified bull fiddle. He looked around, blinking, and discovered that the sound was coming from the Aurigean. The monster, with its tentacles tightly curled around the tip of its body, was scuttling into the corridor. As Weaver watched in confusion, it vanished, and a sheet of metal slid across the doorway.

More boomings came shortly from a source Weaver finally identified as a grille over the control panels. He took a step that way, then changed his mind and turned back toward the airlock.

Just as he reached the nearer airlock door, the farther one swung open and an instant torrent of wind thrust him outward.

Strangling, Weaver grabbed desperately at the door-frame as it went by. He swung with a sickening thud into the inner wall, but he hung on and pulled himself back inside.

The force of the wind was dropping rapidly; so was the air pressure. Ragged black blotches swam before Weaver's eyes. He fumbled with his helmet, trying to swing it back over his head; but it stubbornly remained where it was. The blow when he struck the airlock wall, he thought dimly—it must have bent the helmet so that it would not fit into its grooves.

He forced himself across the room, toward the faint gleam of

the Aurigean control board—shaped like a double horseshoe it was, around the two lattice-topped stools, and bristling with levers, knobs and sliding panels. One of these, he knew, controlled the airlock. He slapped blindly at them, pulling, pushing, turning as many as he could reach. Then the floor reeled under him, and, as he fell toward it, changed into a soft gray endless mist. . .

When he awoke, the airlock door was closed. His lungs were gratefully full of air. The Aurigean was nowhere to be seen; the door behind which he had disappeared was still closed.

Weaver got up, stripped off his spacesuit, and, by hammering with the sole of one of the boots, managed to straighten out the dent in the back of the helmet. He put the suit back on, then looked doubtfully at the control board. It wouldn't do to go on pulling things at random; he might cause some damage. Tentatively, he pushed a slide he remembered touching before. When nothing happened, he pushed it back. He tried a knob, then a lever.

The inner door of the airlock swung open.

Weaver marched into it, took one look through the viewport set in the outer door, and scrambled back out. He closed the airlock again, and thought a minute.

In the center of each horseshoe curve of the control board was a gray translucent disk, with six buttons under it. They might, Weaver thought, be television screens. He pressed the first button under one of them, and the screen lighted up. He pressed the second button, then all the others in turn.

They all showed him the same thing—the view he had seen from the viewport in the airlock: stars, and nothing but stars.

The Moon, incredibly, had disappeared. He was in space.

His first thought, when he was able to think connectedly again, was to find the Aurigean and make him put things right. He tried all the remaining knobs and levers and buttons on the control board, reckless of consequences, until the door slid open again. Then he went down the corridor and found the Aurigean.

The creature was lying on the floor, with a turnip-shaped thing over its head, tubes trailing from it to an opened cabinet in the wall. It was dead—dead and decaying.

He searched the ship. He found storerooms, with cylinders

and bales of stuff that looked as if it might possibly be food; he found the engine room, with great piles of outlandishly sculptured metal and winking lights and swinging meter needles. But he was the only living thing on board.

The view from all six directions—in the control room telescreens, and in the ship's direct-view ports alike—was exactly the same. The stars, like dandruff on Weaver's blue serge suit. No one of them, apparently, any nearer than the others. No way to tell which, if any of them, was his own.

The smell of the dead creature was all through the ship. Weaver closed his helmet against it; then, remembering that the air in his suit tank would not last forever, he lugged the corpse out to the airlock, closed the inner door on it, and opened the outer one.

It was hard for him to accept the obvious explanation of the Aurigean's death, but he finally came to it. He recalled something the guide had said about the Aurigeans' susceptibility to Earthly infections. That must have been it. That had been why the creature had bellowed and run to seal itself off from him. It was all his fault.

If he had not sneezed with his helmet open, the Aurigean would not be dead. He would not be marooned in space. And the other Aurigeans, down on Earth, would not be marooned there. Though they, he decided wistfully, would probably get home sooner or later. They knew where home was.

As far as he could, he made himself master of the ship and its contents. He discovered, by arduous trial and error, which of the supposed foods in the storerooms he could eat safely, which would make him sick, and which were not foods at all. He found out which of the control board's knobs and levers controlled the engines, and he shut them off. He studied the universe around him, hoping to see some change.

After nearly a month, it happened. One star grew from a brilliant pinpoint to a tiny disk, and each time he awoke it was larger.

Weaver took counsel with himself, and pasted a small piece of transparent red tape over the place on the telescreen where the star appeared. He scratched a mark to show where the star was on each of three succeeding "days." The trail crawled diagonally down toward the bottom of the screen.

He knew nothing about astrogation; but he knew that if he

were heading directly toward the star, it ought to stay in the same place on his screen. He turned on the engines and swung the steering arm downward. The star crawled toward the center of the screen, then went past. Weaver painstakingly brought it back; and so, in parsec-long zigzags, he held his course.

The star was now increasing alarmingly in brightness. It occurred to Weaver that he must be traveling with enormous speed, although he had no sensation of movement at all. There was a position on the scale around the steering arm that he thought would put the engines into reverse. He tried it, and now he scratched the apparent size of the star into the red tape. First it grew by leaps and bounds, then more slowly, then hardly at all. Weaver shut off the engines again, and waited.

The star had planets. He noted their passage in the telescreen, marked their apparent courses, and blithely set himself to land on the one that seemed to be nearest. He was totally ignorant of orbits; he simply centered his planet on the screen as he had done with the star, found that it was receding from him, and began to run it down.

He came in too fast the first time—tore through the atmosphere like a lost soul and frantically out again, sweating in the control room's sudden heat. He turned, out in space, and carefully adjusted his speed so that ship and planet drifted softly together. Gently, as if he had been doing this all his life, Weaver took the ship down upon a continent of rolling greens and browns, landed it without a jar —saw the landscape begin to tilt as he stepped into the airlock, and barely got outside before the ship rolled ten thousand feet down a gorge he had not noticed and smashed itself into a powdering of fragments.

Two days later, he began turning into a god.

II

They had put him into a kind of enclosed seat at the end of a long rotating arm, counterweighted at the opposite side of the aircar proper, and the whole affair swung gently in an eccentric path, around and around, and up and down as the aircar moved very slowly forward through the village.

All the houses were faced with broad wooden balconies stained blood-red and turquoise, umber and yellow, gold and pale green; and all of these were crowded to bursting with the blue and white

horny chests and the big-eyed faces of the bug things. Weaver swung in his revolving seat past first one level and another, and the twittering voices burst around him like the stars of a Fourth-of-July rocket.

This was the fifth village they had visited since the bug things had found him wandering in the mountains. At the first one, he had been probed, examined and twittered over interminably; then the aircar had arrived, they had strapped him into this ridiculous seat and begun what looked very much like a triumphal tour. Other aircars, without the revolving arm, preceded and followed him. The slowly floating cars and their riders were gay with varicolored streamers. Every now and then one of the bug things in the cars would raise a pistol-like object to fire a pinkish streak that spread out, high in the air, and became a gently descending, diffusing cloud of rosy dust. And always the twittering rose and fell, rose and fell as Weaver revolved at the end of the swinging arm.

One had to remember, he reminded himself, that Earthly parallels did not necessarily apply. It was undignified, certainly, to be revolving like a child on a merry-go-round, while these crowds glared with bright alien eyes; but the important thing was that they had not once offered him any violence. They had not even put him into the absurd revolving seat by force; they had led him to it gently, with a great deal of gesturing and twittered explanation. And if their faces were almost nauseatingly unpleasant—with the constantly-moving complexity of parts that he had seen in live lobsters—well, that proved nothing except that they were not human. Later, perhaps, he could persuade them to wear masks. . .

It was a holiday; a great occasion—everything testified to that. The colored streamers, the clouds of rosy dust like skyrockets, the crowds of people lined up to await him. And why not? Clearly, they had never before seen a man. He was unique, a personage to be honored: a visitor descended from the heavens, clothed in fire and glory. Like the Spaniards among the Aztecs, he thought.

Weaver began to feel gratified, his ego expanding. Experimentally, he waved to the massed ranks of bug things as he passed them. A new explosion of twittering broke out, and a forest of twiglike arms waved back at him. They seemed to regard him with happy awe.

"Thank you," said Weaver graciously. "Thank you. . ."

In the morning, there were crowds massed outside the building where he had slept; but they did not put him into the aircar with the revolving arm again. Instead, four new ones came into his room after he had eaten the strange red and orange fruits that were all of the bug diet he could stomach, and began to twitter very seriously at him, while pointing to various objects, parts of their bodies, the walls around them, and Weaver himself.

After awhile, Weaver grasped the idea that he was being instructed. He was willing to cooperate, but he did not suppose for a moment that he could master the bird-like sounds they made. Instead, he took an old envelope and a stub of pencil from his pocket and wrote the English word for each thing they pointed out. "ORANGE," he wrote—it was not an orange, but the color was the same, at any rate—"THORAX. WALL. MAN. MANDIBLES."

In the afternoon, they brought a machine with staring lenses and bright lights. Weaver guessed that he was being televised; he put a hand on the nearest bug thing's shoulder, and smiled for his audience.

Later, after he had eaten again, they went on with the language lesson. Now it was Weaver who taught, and they who learned. This, Weaver felt, was as it should be. These creatures were not men, he told himself; he would give himself no illusions on that score; but they might still be capable of learning many things that he had to teach. He could do a great deal of good, even if it turned out that he could never return to Earth.

He rather suspected that they had no spaceships. There was something about their life—the small villages, the slowly drifting aircars, the absence of noise and smell and dirt, that somehow did not fit with the idea of space travel. As soon as he was able, he asked them about it. No they had never traveled beyond their own planet. It was a great marvel; perhaps he could teach them how, sometime.

As their command of written English improved, he catechized them about themselves and their planet. The world, as he knew already, was much like Earth as to atmosphere, gravity and mean temperature. It occurred to him briefly that he had been lucky to hit upon such a world, but the thought did not stick; he had no way of knowing just how improbable his luck had been.

They themselves were, as he had thought, simple beings. They had a written history of some twelve thousand of their years, which he estimated to be about nine thousand of his. Their technical accomplishments, he had to grant, equalled Earth's and in some cases surpassed them. Their social organization was either so complex that it escaped him altogether, or unbelievably simple. They did not, so far as he could discover, have any political divisions. They did not make war.

They were egg-layers, and they controlled their population simply by means of hatching only as many eggs as were needed to replace their natural losses.

Just when it first struck Weaver that he was their appointed ruler it would be hard to say. It began, perhaps, that afternoon in the aircar; or a few days later when he made his first timid request—for a house of his own. The request was eagerly granted, and he was asked how he would like the house constructed. Half timidly, he drew sketches of his own suburban home in Schenectady; and they built it, swarms of them working together, down to the hardwood floors and the pneumatic furniture and the picture mouldings and the lampshades.

Or perhaps the idea crystallized when he asked to see some of their native dances, and within an hour the dancers assembled on his lawn—five hundred of them—and performed until sundown.

At any rate, nothing could have been more clearly correct once he had grasped the idea. He was a Man, alone in a world of outlandish creatures. It was natural that he should lead; indeed, it was his duty. They were poor things, but they were malleable in his hands. It was a great adventure. Who knew how far he might not bring them?

Weaver embarked on a tour of the planet, taking with him two of the bug things as guides and a third as pilot and personal servant. Their names in their own tongue he had not bothered to ask; he had christened them Mark, Luke and John. All three now wrote and read English with fair proficiency; thus Weaver was well served.

The trip was entirely enjoyable. He was met everywhere by the same throngs, the same delight and enthusiasm as before; and between villages—there seemed to be nothing on the planet that could be called a city—the rolling green countryside,

dotted with bosquets of yellow- and orange-flowered trees, was most soothing to the eye. Weaver noted the varieties of strangely shaped and colored plants, and the swarms of bright flying things, and began an abortive collection. He had to give it up, for the present: there were too many things to study. He looked forward to a few books to be compiled later, when he had time, for the guidance of Earthmen at some future date: *The Flora of Terranova, The Fauna of Terranova. . .*

All that was for the distant future. Now he was chiefly concerned with the Terranovans themselves—how they lived, what they thought, what sort of primitive religion they had, and so on. He asked endless questions of his guides, and through them, of the villagers they met; and the more he learned, the more agitated he became.

"But this is monstrous," he wrote indignantly to Mark and Luke They had just visited a house inhabited by seventeen males and twelve females—Weaver was now beginning to be able to distinguish the sexes—and he had inquired what their relations were. Mark had informed him calmly that they were husbands and wives; and when Weaver pointed out that the balance was uneven, had written, "No, not one to one. All to all. All husband and wife of each other."

Mark held Weaver's indignant message up to his eyes with one many-jointed claw, while his other three forelimbs gestured uncertainly. Finally he seized the note-pad and wrote, "Do not understand monstrous, please forgive. They do for more change, so not to make each other have tiredness."

Weaver frowned and wrote, "Does not your religion forbid this?"

Mark consulted in his own piping tongue with the other two. Finally he surrendered the note-pad to Luke, who wrote: "Do not understand religion to forbid, please excuse. With us many religion, some say spirits in flower, some say in wind and sun, some say in ground. Not say to do this, not to do that. With us all people the same, no one tell other what to do."

Weaver added another mental note to his already lengthy list: "Build churches."

He wrote: "Tell them this must stop."

Mark turned without hesitation to the silently attentive group and translated. He turned back to Weaver and wrote, "They ask please, what to do now instead of the way they do?"

Weaver told him, "They must mate only one to one, and for life."

To his surprise, the translation of this was greeted by unmistakable twitterings of gladness. The members of the adulterous group turned to each other with excited gestures, and Weaver saw a pairing-off process begin, with much discussion.

He asked Mark about it later, as they were leaving the village. "How is it that they did this thing before—for more variety, as you say—and yet seem so glad to stop?"

Mark's answer was: "They very glad to do whatever thing you say. You bring them new thing, they very happy."

Weaver mused on this, contentedly on the whole, but with a small undigested kernel of uneasiness, until they reached the next village. Here he found a crowd of Terranovans of both sexes and all ages at a feast of something with a fearful stench. He asked what it was; Mark's answer had better not be revealed. Feeling genuinely sick with revulsion, Weaver demanded, "Why do they do such an awful thing? This is ten times worse than the other."

This time Mark answered without hesitation. "They do this like the other, for more change. Is not easy to learn to like, but they do, so not to make themselves have tiredness."

There were three more such incidents before they reached the village where they were to sleep that night; and Weaver lay awake in his downy bed, staring at the faint shimmer of reflected starlight on the carved roof-beams, and meditating soberly on the unexpected, the appalling magnitude of the task he had set himself.

From this, he came to consider that small dark kernel of doubt. It was of course dreadful to find that his people were so wholly corrupt, but that at least was understandable. What he did not understand was the reason they could be so easily weaned from their wickedness. It left him feeling a little off-balance, like a man who has hurled himself at his enemy and found him suddenly not there. This reminded him of ju-jitsu, and this in turn of the ancient Japanese—to whom, indeed, his Terranovans seemed to have many resemblances. Weaver's uneasiness increased. Savage peoples were notoriously devious—they smiled and then thrust knives between your ribs.

He felt a sudden prickling coldness at the thought. It was improbable, it was fantastic that they would go to such lengths

to gratify his every wish if they meant to kill him, he told himself; and then he remembered the Dionysian rites, and a host of other, too-similar parallels. The king for a day or a year, who ruled as an absolute monarch, and then was sacrificed—

And, Weaver remembered with a stab of panic, usually eaten.

He had been on Terranova for a little over a month by the local calendar. What was his term of office to be—two months? Six? A year, ten years?

He slept little that night, woke late in the morning with dry, irritated eyes and a furred mouth, and spent a silent day, inspecting each new batch of natives without comment, and shivering inwardly at each motion of the clawed arms of Mark, Luke or John. Toward evening he came out of his funk at last, when it occurred to him to ask about weapons.

He put the query slyly, wording it as if it were a matter of general interest only, and of no great importance. Were they familiar with machines that killed, and if so, what varieties did they have?

At first Mark did not understand the question. He replied that their machines did not kill, that very long ago they had done so but that the machines were much better now, very safe and not harmful to anyone. "Then," wrote Weaver carefully, "you have no machines which are made for the purpose of killing?"

Mark, Luke and John discussed this with every evidence of excitement. At last Mark wrote, "This very new idea to us."

"But do you have in this world no large, dangerous animals which must be killed? How do you kill those things which you eat?"

"No dangerous animals. We kill food things, but not use machines. Give some things food which make them die. Give some no food, so they die. Kill some with heat. Some eat alive."

Weaver winced with distaste when he read this last, and was about to write, "This must stop." But he thought of oysters, and decided to reserve judgment.

After all, it had been foolish of him to be frightened last night. He had been carried away by a chance comparison which, calmly considered, was superficial and absurd. These people were utterly peaceful—in fact, spineless.

He wrote, "Take the aircar up farther, so that I can see this village from above."

He signaled John to stop

when they had reached a height of a few hundred feet. From this elevation, he could see the village spread out beneath him like an architect's model—the neat cross-hatching of narrow streets separating the hollow curves of rooftops, dotted with the myriad captive balloons launched in honor of his appearance.

The village lay in the gentle hollow of a wide valley, surrounded by the equally gentle slopes of hills. To his right, it followed the bank of a fair-sized river; in the other three directions the checkered pattern ended in a careless, irregular outline and was replaced by the larger pattern of cultivated fields.

It was a good site—the river for power, sanitation and transportation, the hills for a sheltered climate. He saw suddenly, in complete, sharp detail, how it would be.

"The trip is over," he wrote with sudden decision. "We will stay here, and build a city."

III

The most difficult part was the number of things that he had to learn. There was no trouble about anything he wanted done by others; he simply commanded, and that was the end of it. But the mass of knowledge about the Terranovans and their world before he came appalled him not only by its sheer bulk but by its intricacy, the unexplained gaps, the contradictions. For a long time after the founding of New Washington—later New Jerusalem—he was still bothered a little by doubt. He wanted to learn all that there was to learn about the Terranovans, so that finally he would understand them completely and the doubt would be gone.

Eventually he confessed to himself that the task was impossible. He was forty-seven years old; he had perhaps thirty years ahead of him, and it was not as if he were able to devote them solely to study. There was the written history of the Terranovans, which covered minutely a period of nine thousand years—though not completely; there were periods and places which seemed to have left no adequate records of themselves. The natives had no reasonable explanation of this phenomenon; they simply said that the keeping of histories sometimes went out of fashion.

Then there was the biology of the Terranovans and the countless other organisms of the planet—simply to catalogue them and give them English names, as he had set out to do, would have occupied him the

rest of his lifetime.

There was the complex and puzzling field of social relations—here again everything seemed to be in unaccountable flux, even though the over-all pattern remained the same and seemed as rigid as any primitive people's. There was physics, which presented exasperating difficulties of translation; there was engineering, there was medicine, there was economics. . .

When he finally gave it up, it was not so much because of the simple arithmetical impossibility of the job as because he realized that it didn't matter. For a time he had been tempted away from the logical attitude toward these savages of his—a foolish weakness of the sort that had given him that ridiculous hour or two, when, he now dimly recalled, he had been afraid of the Terranovans—afraid, of all things, that they were fattening him for the sacrifice!

Whereas it was clear enough, certainly, that the *former* state of the Terranovans, their incomprehensible society and language and customs, simply had no practical importance. He was changing all that. When he was through, they would be what he had made them, no more and no less.

It was strange, looking back, to realize how little he had seen of his destiny, there at the beginning. Timid little man, he thought half in amusement, half contemptuously: nervous and fearful, seeing things *small*. Build me a house, like the one I had in Schenectady!

They had built him a palace—no, a *temple*—and a city; and they were building him a world. A planet that would be his to the last atom when it was done; a corner of the universe that was Algernon James Weaver.

He recalled that in the beginning he had felt almost like these creatures' servant—"public servant," he had thought, with self-righteous lukewarm pleasure. He had seen himself as one who built for others—the more virtuous because those others were not even men.

But it was not he who built. *They* built, and for him.

It was strange, he thought again, that he should not have seen it from the first. For it was perfectly clear and all of a pattern.

The marriage laws. *Thou shalt not live in adultery.*

The dietary laws. *Thou shalt not eat that which is unclean.*

And the logical concomitant, the law of worship. *Thou shalt have no gods before Me.*

The apostles . . . Mark, Luke

and John. Later, Matthew, Philip, Peter, Simon, Andrew, James, Bartholomew and Thomas.

He had a feeling that something was wrong with the list besides the omission of Judas—unluckily, he had no Bible—but it was really an academic question. They were *his* apostles, not that Other's.

The pattern repeated itself, he thought, but with variations.

He understood now why he had shelved the project of Christianizing the natives, although one of his first acts had been to abolish their pagan sects. He had told himself at first that it was best to wait until he had put down from memory the salient parts of the Holy Bible—Genesis, say, the better-known Psalms, and a condensed version of the Gospels; leaving out all the begats, and the Jewish tribal history, and awkward things like the Songs of Solomon. (*Thy mandibles are like pomegranates* . . . no, it wouldn't do).

And, of course, he had never found time to wrack his brains for the passages that eluded him. But all that had been merely a subterfuge to soothe his conscience, while he slowly felt his way into his new role.

Now, it was almost absurdly simple. He was writing his own holy book—or rather, Luke, Thomas, and a corps of assistants were putting it together from his previous utterances, to be edited by him later.

The uneasy rustling of chitinous arms against white robes recalled him from his meditation. The swarm of priests, altar boys, and the rest of his retinue was still gathered around him, waiting until he should deign to notice them again. Really, God thought with annoyance, this woolgathering—at such a moment!

The worshippers were massed in the Temple. A low, excited twittering rose from them as He appeared and walked into the beam of the spotlight.

The dark lenses of television cameras were focused on Him from every part of the balcony at the rear of the hall. The microphones were ready. Weaver walked forward as the congregation knelt, and waited an impressive moment before He spread His hands in the gesture that meant, "Rise, my children." Simon, previously coached, translated. The congregation rose again, rustling, and then was still.

At a signal from Simon, the choir began a skirling and screeching which the disciples warranted to be music—religious music, composed to fit the re-

quirements He had laid down. Weaver endured it, thinking that some changes must come slowly.

The hymn wailed to an end, and Weaver gripped the lectern, leaning carefully forward toward the microphones. "My children," He began, and waited for Solomon's twittering translation. "You have sinned greatly—" Twitter. "—and in many ways." Twitter. "But I have come among you—" Twitter. "—to redeem your sins—" Twitter. "—and make them as though they had never been." Twitter.

He went on to the end, speaking carefully and sonorously. It was not a long sermon, but He flattered Himself that it was meaty. At the end of it He stepped back a pace, and folded His arms, in their long white-silk sleeves, across His chest.

Simon took over now, and so far as Weaver could judge, he did well. He recited a litany which Weaver had taught him, indicating by gestures that the congregation was to repeat after him every second speech. The low chirping welled from the hall; a comforting, warming sound, almost like the responses of a human congregation. Weaver felt tears welling to His eyes, and He restrained Himself from weeping openly only by a gigantic effort. After all, He was a god of wrath; but the love which swept toward Him at this moment was a powerful thing to gainsay.

When it was all over, He went back to His sanctum, dismissed all His retinue except His regular assistants, and removed the ceremonial robes.

"The people responded well," He said. "I am pleased."

Simon said, "They will work hard to please You, Master. You bring great happiness to them."

"That is well," said Weaver. He sat down behind His great desk, while the others stood attentively below Him in the sunken fore-section of the sanctum. "What business have you for Me today?"

"There is the matter of the novel, Master," said Mark. He stepped forward, mounted the single step to Weaver's dais, and laid a sheaf of papers on the desk. "This is a preliminary attempt which one called Peter Smith has made with my unworthy help."

"I will read it later," Weaver told him. It was poor stuff, no doubt—what else could one expect?—but it was a start. He would tell them what was wrong with it, and they would try again.

Literary criticism, armaments, tariffs, manners—there was no end to it. "What else?"

Luke stepped forward. "The plans for the large weapons You commanded Your servants to design, Master." He put three large sheets of parchment on the desk.

Weaver looked at the neat tracery on the first, and frowned. "You may come near Me," He said. "Show Me how these are meant to operate."

Luke pointed to the first drawing. "This is the barrel of the weapon, Master," he said. "As You commanded, it is rifled so that the missile will spin. Here the missile is inserted at the breech, according to Your direction. Here is the mechanism which turns and aims the weapon, as You commanded. It is shown in greater detail on this second sheet. . . And here, on the third, is the missile itself. It is hollow and filled with explosive powder, as You ordered, and there is in the tip a device which will attract it to the target."

Weaver gravely nodded. "Has it been tested?"

"In models only, Master. If You direct, the construction will begin at once."

"Good. Proceed. How many of these can you make for Me within a month?"

Luke hesitated. "Few, Master. At first all must be done by hand methods. Later it will be possible to make many at a time—fifty, or even a hundred in one month —but for the first two or three months, Master, two weapons in a month is all that Your unworthy servants can do."

"Very well," said Weaver. "See to it."

He turned and examined the large globe of the planet which stood on His desk. Here was another product of His genius; the Terranovans had scarcely had maps worthy of the name before His Coming.

The three major continents trailed downward like fleshy leaves from the north pole; He had called them America, Europe and Asia, and they were so lettered on the globe. In the southern hemisphere, besides the tips of Europe and Asia and fully a third of America, there was a fourth continent, shaped rather like a hat, which He had called Australia. There was no Africa on Terranova, but that was small loss; Weaver had never thought highly of Africa.

The planet itself, according to the experts who had been assigned the problem, was a little more than ten thousand miles in diameter. The land area, Weaver thought, probably amounted to more than fifty million square miles. It was a great deal to defend; but it must be done.

"Here is your next assign-

ment," He told Luke. "Put a team to work on selecting and preparing sites for these guns, when they are built. There must be one in every thousand square miles. . ."

Luke bowed and took the plans away.

. . . For otherwise, Weaver thought somberly, another ship might land, some day. And how could I trust these children not to *welcome* it?

Sunlight gleamed brilliantly from the broad, white-marble plaza beyond the tall portico. Looking through the windows, He could see the enormous block of stone in the center of the plaza, and the tiny robot aircar hovering near it, and the tiny ant-shapes of the crowd on the opposite side. Beyond, the sky was a clear, faultless blue.

"Are you ready now, Master?" asked Luke.

Weaver tested His limbs. They were rigid and almost without sensation; He could not move them so much as the fraction of an inch. Even His lips were as stiff as that marble outside. Only the fingers of His right hand, clutching a pen, felt as if they belonged to Him.

A metal frame supported a note-pad where His hand could reach it. Then he wrote, "Yes. Proceed with the statue.

Luke was holding a tiny torpedo-shaped object that moved freely at the end of a long, jointed metal arm. He moved it tentatively toward Weaver's left shoulder. Outside, the hovering aircar duplicated the motion: the grinder at its tip bit with a screech into the side of the huge stone.

Weaver watched, feeling no discomfort; the drug Luke had injected was working perfectly. Luke moved the pantograph pointer, again and again, until it touched Weaver's robed body. With every motion, the aircar bored a tunnel into the stone to the exact depth required, and backed out again. Slowly a form was beginning to emerge.

The distant screech of the grinder was muffled and not unpleasant. Weaver felt a trifle sleepy.

The top of one extended arm was done. The aircar moved over and began the other, leaving the head still buried in stone.

After this, Weaver thought, He could rest. His cities were built, His church founded, His guns built and tested, His people trained. The Terranovans were as civilized as He could make them in one generation. They had literary societies. newsstands, stock markets, leisure and working classes, baseball leagues, armies. . . They had

had to give up their barbaric comfort, of course; so much the better. Life was real, life was earnest—Weaver had taught them that.

The mechanism of His government ran smoothly; it would continue to run, with only an occasional guiding touch. This was His last major task. The monument.

Something to remember Me by, He thought drowsily. Myself in stone, long after I am gone. That will keep them to My ways, even if they should be tempted. To them I will still be here, standing over them, gigantic, imperishable.

They will still have something to worship.

Stone dust was obscuring the figure now, glittering in the sunlight. Luke undercut a huge block of the stone and it fell, turning lazily, and crashed on the pavement. Robot tractors darted out to haul the pieces away.

Weaver was glad it was Luke whose hand was guiding the pantograph, not one of the bright, efficient younger generation. They had been together a long time, Luke and He. Almost ten years. He knew Luke as if he were a human being; *understood* him as if he were a person. And Luke knew Him better than any of the rest; knew His smiles and His frowns, all His moods.

It had been a good life. He had done all the things He set out to do, and He had done them in His own time and His own way. At this distance, it was almost impossible to believe that He had once been a little man among billions of others, conforming to their patterns, doing what was expected of Him.

His free hand was growing tired from holding the pen. When all the rest was done, Luke would freeze that hand also, and then it would be only a minute or so until he could inject the antidote. He scribbled idly, "Do you remember the old days, before I came, Luke?"

"Very well, Master," said the apostle. "But it seems a long time ago."

Yes, Weaver told Himself contentedly; just what I was thinking. We understand each other, Luke and I. He wrote, "Things are very different now, eh?"

"Very different, Master. You made many changes. The people are very grateful to You."

He could see the broad outlines of the colossal figure now: the arms, in their heavy ecclesiastical sleeves, outstretched in benediction, the legs firmly planted. But the bowed head was still a rough, featureless mass of stone, not yet shaped.

"Do you know," Weaver wrote, on impulse, "that when I first came, I thought for a time that you were savages who might want to eat Me?"

That would startle Luke, He thought. But Luke said, "We all wanted to, very much. But that would have been foolish, Master. Then we would not have had all the other things. And besides, there would not have been enough of You for all."

The aircar screeched, driving a tunnel along the edge of the parted vestments.

God felt a cold wind down the corridor of time. He had been that close, after all. It was only because the natives had been cold-bloodedly foresighted that He was still alive. The idea infuriated Him, and somehow He was still afraid.

He wrote, "You never told me this. You will all do a penance for it."

Luke was dabbing the pointer carefully at the bald top of Weaver's head. His horny, complicated face was unpleasantly close, the mandibles unpleasantly big even behind his mouth veil.

Luke said, "We will, very gladly . . . except that perhaps the new ones will not like it."

Weaver felt bewildered. In one corner of His mind He felt a tiny darkness unfolding: the kernel of doubt, forgotten so long, but there all the time. Growing larger now, expanding to a ragged, terrifying shape.

He wrote, "What do you mean? Who are 'the new ones'?"

Luke said, "We did not tell You. We knew You would not like it. A spaceship landed in Asia two months ago. There are three people in it. One is sick, but we believe the other two will live. They are very funny people, Master."

The pantograph pointer moved down the side of God's nose ,and another wedge of stone fell in the plaza.

"They have three long legs, and a very little body, and a head with one eye in front and one behind. Also they have very funny ideas. They are horrified at the way we live, and they are going to change it all around."

Weaver's fingers jerked uncontrollably, and the words wavered across the page. "I don't understand. I don't understand."

"I hope You are not angry, Master," said Luke. "We are very grateful to You. When You came, we were desperately bored. There had been no new thing for more than seven thousand years, since the last ship came from space. You know that we have not much imagination. We tried to invent new things, for ourselves, but we could never think

of anything so amusing as the ones You gave us. We will always remember You with gratitude."

The pantograph was tracing Weaver's eyelids, and then the unfeeling eyes themselves.

"But all things must end," said Luke. "Now we have these others, who do not like what you have done, so we cannot worship you any more. And anyway, some of the people are growing tired. It has been ten years. A long time."

One thought pierced through the swirling fear in Weaver's mind. The guns, built with so much labor, the enormous guns that could throw a shell two hundred miles. The crews, manning them night and day to destroy the first ship that came in from space. And they had never meant to use them!

Anger fought with caution. He felt peculiarly helpless now, locked up in his own body like a prison. "What are you going to do?" he scrawled.

"Nothing that will hurt, Master," said Luke. "You remember, I told you long ago, we had no machines for killing before you came. We used other things, like this drug which paralyzes. You will feel no pain."

Algernon Weaver's hand, gripping the pen as a drowning man holds to a stave, was moving without his volition. It was scrawling in huge letters, over and over, "NO NO NO"...

"It is too bad we cannot wait," said Luke, "but it has to be done before the new ones get here. They would not like it, probably."

He let the pointer go, and it hung where he had left it. With two jointed claws he seized Weaver's hand and straightened it out to match the other, removing the pen. With a third claw he thrust a slender needle under the skin. Instantly the hand was as rigid as the rest of Weaver's body. Weaver felt as if the last door had been slammed, the telephone wires cut, the sod thrown on the coffin.

"This is the way we have decided," said Luke. "It is a shame, because perhaps these new ones will not be as funny as you, after all. But it is the way we have decided."

He took up the pantograph pointer again.

In the plaza, the aircar ground at the huge stone head, outlining the stern mouth, the resolute, bearded jaw. Helplessly, Weaver returned the stare of that remorseless, brooding face: the face of a conqueror.

The Business of Science

BY MILTON A. ROTHMAN

When you spill some of the commercial isotopes beyond your prefabricated shield, you'll naturally want a handy box of Radiac-wash detergent to clean up the mess. And who could resist a betatron for a mere $100,000?

Civilization has always revealed itself in its writings and publications, but during the past hundred years a new medium has grown up which gives a wonderfully clear picture of our changing culture. By looking at the advertisements in our papers and magazines a man from Mars could form quite a detailed impression of the manner in which we live. He might have to use some discretion to separate wishful thinking from actuality, but in general the more factual type of advertisements show quite completely the innumerable products of our industrial ingenuity. In fact, it has been said that the distribution of a few million Sears-Roebuck catalogues throughout Russia would be more effective propaganda than the most elaborate pamphlets and radio programs.

In a like manner, a glance through the advertisements in our scientific journals gives a very good idea of our progress in scientific research. The first thing that strikes the reader when he looks at recent journals is the tremendous variety of technical equipment which may be bought nowadays. There are companies which now manufacture as standard catalogue items devices which only ten years ago had to be built by the individual scientist in his own laboratory. There are instruments of an accuracy and range undreamed of ten years ago.

There are hosts of devices one may buy now which did not even exist before the war, machines inspired by the rise of new industries and new techniques.

Dozens of new companies have risen into prosperity during the past *five* years by manufacturing equipment for scientists to use in

brand new branches of science. The most obvious example is the science of nucleonics. The journals are filled with advertisements of many and varied gadgets for accomplishing everything under the sun in the line of nuclear physics. You can buy Geiger counters and scintillation counters for measuring alpha, beta, and gamma rays, as well as neutrons. You can buy scaling circuits to keep count of these particles. These range from the simplest counting circuits to elaborate automatic devices which will handle dozens of radioactive samples automatically, recording on a paper tape the number of counts arising in a given time, or recording the time required for a predetermined number of counts. You can even buy complete setups for measuring the age of archeological specimens by the radioactive carbon method.

For medical work there are manufactured counters specially adapted to detecting radiation emitted from isotopes placed within the human body for tracer studies. One such device, called the "Scintiscanner," actually plots an outline diagram of the organ, such as the thyroid gland, where the radioisotope may be concentrated.

In addition, you can buy multi-channel pulse-height discriminators. Into these circuits you feed a number of rapid electrical pulses of different sizes. These pulses may be only a millionth of a second in duration, in height they may range from a fraction of a volt to a hundred volts. The pulse-height discriminator will sort out the pulses of various heights, and will record the number of pulses in each interval of height. The output is shown on a number of mechanical registers. The first register will show—for example—the number of pulses which fall between 0 and 10 volts, the second will show the pulses which fall between 10 and 20 volts, and so on. An instrument of this sort is highly useful in studying atomic radiation where you are interested in measuring the energy of each particle striking the detector. Until recently such circuits were very complex devices which had to be hand made in the laboratory. Now they are still complex, but have been put on a production basis.

Naturally, isotopes are now a large item on the storekeeper's shelf. In addition to many radioactive isotopes available from Oak Ridge, the Nuclear Instrument and Chemical Corporation advertises a number of organic compounds labeled with Carbon-14 from their "Isotope Farm."

Inevitable by-product of the use of radioactive isotopes in laboratories is the need for special tools and equipment to handle them. From companies such as Tracerlab, you can buy the lead aprons and gloves, the long tongs and remote-control handling devices for manipulating "hot" materials. You can buy lead bricks fabricated with tongues and grooves so that shields may be constructed out of them without the danger of radiation leaking through the joints.

Finally, in case you happen to spill some radioactive chemical and get the top of your table contaminated, you can buy a special detergent called Radiacwash, which is specially designed for the de-contamination of surfaces!

Do you want to accelerate protons or electrons to high energies? Don't waste your time building a machine. You can buy a 200,000 volt Cockroft-Walton generator from the Beta Electric Co. If you need higher voltages you can buy a Van de Graaf electrostatic generator from the High Voltage Engineering Corporation. This will take you up to five million volts. Need more energy? From Allis-Chalmers you can buy a nicely compact 25 million volt betatron. This they sell in three models—the straight research betatron, the medical job for X-ray therapy, and one mounted from the ceiling on a crane for making X-ray photographs of large steel castings. General Electric advertises a 50 million volt synchrotron, and their catalogue even includes their 100 million volt betatron, although in confidence only one of these has been built. Beyond this range the poor physicist must get his hands dirty and build his own accelerator.

A technical development which has inspired the rise of several million-dollar industries is the oil diffusion vacuum pump. Before the last war such pumps were being sold on a limited scale for pumping out small containers such as radio tubes or laboratory bell jars. During the war they learned how to make larger and larger pumps, until today you can buy from companies such as Distillation Products Industries high vacuum pumps of a size and speed which were unheard of ten years ago. It is pumps such as these which make possible the tremendous particle accelerators such as the 2 billion volt Cosmotron at Brookhaven, since the huge vacuum tube in this machine must be kept pumped out constantly. Several giant pumps located around the great doughnut-shaped tube keep

the air pressure down to the required quantity.

These pumps also made possible a company such as the Evaporated Metal Films Company, which makes mirrors by evaporating extremely thin coatings of metal onto the surface of a sheet of glass. To do this requires a large vacuum chamber into which the polished glass sheet is placed. A short distance away in the chamber a small amount of aluminum is heated by a tungsten filament. In the absence of air, the aluminum simply evaporates and the atoms of aluminum fly in straight lines onto the surface of the glass, where they deposit in a thin, highly reflective coating. Other metals may be deposited in the same manner. The 200 inch mirror of the Mt. Palomar telescope was prepared in this way.

In addition to the pumps themselves, there is an entire line of vacuum gauges, valves, and other paraphernalia which must be used in building a piece of vacuum equipment.

The field of automatic controls has boomed so tremendously during the past ten years that it is utterly breathtaking to the person who follows the trend. Complete factories can now be built in which all the temperature, pressure, flow, and electrical indicators are located in one central room, so that all the operations of the plant can be directed from this spot. Not only that, but the direction can be accomplished by automatic computing machines, so that the only need for the presence of a human being is to keep a check on the readings of the instruments and to be at hand in case something goes wrong.

In keeping track of the operation of a complicated chemical manufacturing process, it is often necessary to make periodic chemical checks of the material being handled. Formerly this was done by the slow, painstaking methods of chemical analysis. Gradually, the use of spectroscopes became more common. Now engineers have gone farther, and the mass spectrograph is advertised in journals as a routine analytical tool. The mass spectrograph was formerly a delicate laboratory instrument, built and operated by highly trained physicists. Its purpose was to separate the various isotopes of the chemical elements by sending a beam of electrically charged atoms through a magnetic field. The atoms curved in a semi-circle while going through the magnetic field, and the heavier isotopes curved less, while the lighter isotopes curved more. By this method the

weights of the many isotopes were measured, and at Oak Ridge huge instruments of this sort are used to separate small quantities of rare isotopes for research purposes.

Industry has now turned this device into a reliable and automatic instrument for analyzing the materials taking part in a manufacturing process. Thus, the control chemist can keep a close check on how the process is going. In fact, the mass-spectrograph may be used as part of the automatic control system. Suppose you are running an operation in which the percentage of oxygen must be controlled at a certain figure. The mass spectrograph can be attached to the control valves in such a way that the proper percentage is always maintained. In fact, the proportion of several elements can be controlled simultaneously in this manner.

Recording of research data has become revolutionized in recent years. No longer does the scientist find it necessary to keep a notebook full of long columns of numbers copied by hand from electrical meters. (If he has enough money to buy the right equipment, that is.) Several companies sell meters which write down all the data continuously and automatically. The strip chart has taken the place of the data sheet. Suppose, for example, you are testing a new type of airplane in a wind tunnel. Attached to many parts of the model are pressure gauges, strain gauges, and vibration gauges which send their signals to the recorders. As the test progresses, the electrical signals from the gauges are shown as a continuous graph on the strip chart, and thus all of the measurements can be compared at leisure after the conclusion of the experiment.

Even the process of looking at these graphs and carrying through the calculations based on their results has now been simplified. You can buy a machine called the Telereader which reads any sort of graph with an electric eye and converts the curve into a series of numbers which can be used in arithmetic. The machine will either type down the numbers on an electric typewriter, or it will feed the numbers directly into a digital computer that carries out the calculations. Let us say that the calculations have been completed and that the answer is available as a series of numbers. You would like to get a picture of this answer as a curve on a sheet of paper. Formerly the mathematician had to sit down and painstakingly plot the numbers on graph paper, afterwards draw-

ing a curve through the points. Now you can buy the Teleplotter, a machine which automatically takes numerical information and plots the curves for you.

Of course, the calculating machines themselves comprise an entire industry. There is a company, George A. Philbrick Researches, Inc., which sells packaged analogue components. These are small boxes filled with electronic parts that will perform any mathematical operation, such as multiplication, differentiation, integration, etc. The user can connect these little boxes in any manner he pleases, thus setting up a calculating machine whose complexity is limited only by the number of boxes he can afford to buy.

Digital computers are beginning to come on the market, although they are still largely custom-built jobs. The Eckert-Mauchly company will condescend to put you on their waiting list for a model engineered to your specifications. The one type of digital computer available to the average laboratory actually cannot be bought. International Business Machines Corporation will rent you one of their card-punch computers, but will not sell any. The cost of rental comes high.

In fact, it is a deplorable but true fact that the cost of any of the devices mentioned in this article is quite high. There is no doubt that it is highly convenient and time-saving to look through a catalogue and buy a piece of equipment which in former days you would have built yourself. At the same time it means that a modern research laboratory must operate on a budget which would have seemed fantastic fifteen or twenty years ago.

A decent cathode-ray oscilloscope costs $900. The average scaling circuit for use with a geiger counter runs between $300 and $600. A small 25 million volt betatron sells for about $100,000. (This does not count the cost of the building to put it in.) And so on and on. The modern scientist has had to train his mind out of the habit of thinking poor. He has to handle budgets that would make a millionaire turn pale, although when he goes home he may have to debate for a long time over whether he should buy a new suit or a pair of shoes.

As a result of this, scientific knowledge is an increasingly expensive commodity when considered on a dollar-and-cents basis. Every bit of information wrested from nature costs a great deal of money. Take, for example, a very modest piece of research in

which the author recently engaged. This required the operating time of a $100,000 betatron for about six months. If the betatron is good for about 20 years service, this means that $2,500 worth of betatron was used in this experiment. The donut—the vacuum tube in which the electrons are whirled around—costs $3,000, and lasts about 2,000 hours. Say 800 hours of operating time were consumed in this experiment. This means that $1,200 worth of donut was burned up. About $5,000 worth of detecting and counting apparatus was required. This, of course, can be used for other experiments. Pro-rate it on the same basis as the betatron, and we find that only about $125 worth of counting equipment was used.

The salaries of several physicists and technicians had to be paid during that time—some full-time, some part-time. Say $6,000 worth of salaries, roughly. In all, it took nearly $10,000 to perform an experiment in which we obtained certain information concerning the action of 20 million volt X-rays on the nuclei of copper, nickel, and cobalt. This information, when finally published, took up about two pages in the *Physical Review*.

In other words, it took $10,000 of the taxpayer's money to seek out this small quantity of data which served to illuminate one tiny, but rather important, corner of nuclear physics. Multiply this by the dozens of such experiments which are going on in all parts of the country simultaneously, and you obtain an insight into the vast outlay of money and man-power necessary to push the frontiers of science forward one little step after another.

Evidence of the direction in which these frontiers are leading may be found in another set of advertisements to be found in the engineering and physics journals. These are man-power advertisements—high-caliber help-wanted columns. Electronics manufacturers by the dozen need engineers to develop radar, television, servo-mechanisms, telemetering equipment. Aircraft companies need scientists to work in aerodynamics, automatic control, jet propulsion, rockets, guided missiles.

The climax comes when we see full page spreads by Pratt and Whitney and by General Electric asking for physicists to work for them, to help design nuclear powered aircraft.

How long will it be before space-ship manufacturers start advertising?

DIVINITY

BY WILLIAM MORRISON

ILLUSTRATED BY FREAS

Bradley had one fear in his life. He had to escape regeneration. To do that, he was willing to take any chance, coward though he was —even if it meant that he had to become a god!

Bradley seemed to have escaped regeneration. Now he had only death to worry about.

Ten minutes before, he had been tumbling through the air head over heels, helpless and despairing. And before that—

He remembered how his heart had been in his mouth as he had crept down the corridor of the speeding ship. He could hear Malevski's voice coming faintly through one of the walls, and had been tempted to run back, fearful of being shot down on the spot if he were caught. He had fought back the temptation and kept on. No one had seen him as he crept into the lifeboat.

"This is your one chance," he told himself. "You have to take it. If they get you back to port, you're finished."

Luck had been with him. They were broadcasting the results of the Mars-Earth matches at the time, and most of the crew were grouped around the visors. He had picked the moment when news came of a sensational upset, and for a minute or two after the lifeboat blasted off, no one realized what had happened. When the truth did penetrate, they had a hard time swinging the ship around, and by then the lifeboat was out of radar range. He was free.

He had exulted wildly for a moment, until it struck him that freedom in space might be a doubtful gift. He would have to get to some civilized port, convince the port authorities that he had been shipwrecked and somehow separated from the



other crew members, and then lose himself quickly in the crowd of people that he hoped would fill the place. There would be risks, but he would take them. It would be better than running out of air and food in space.

It had been the best possible plan, and it had gone wrong, all wrong. He had been caught, before he knew it, in the gravity of a planet he had overlooked. The lifeboat had torn apart under the combined stresses of its forward momentum and its side rockets blasting full force, and he had been hurled free in his space suit, falling slowly at first, then faster, faster, faster—

The automatic parachutes had suddenly sprung into operation when he reached a critical speed, and he had slowed down and stopped tumbling. He fell more gently, feet first, and when he landed it was with a shock that jarred but did no real damage.

Slowly he picked himself up and fumbled at the air valve. Something in the intake tubes had jammed under the shock of landing, and the air was no longer circulating properly. Filled with the moisture of his own breath, it felt hot and clammy, and clouded the viewplates.

If he had kept all his wits about him he would have tried to remember, before he took a chance, whether the planet had an oxygen atmosphere, and whether the oxygen was of sufficient concentration to support human life. Not that he had any real choice, but it would have been good to know. As it was, he turned the air valve automatically, and listened nervously as the stale air hissed out and the fresh air hissed in.

He took a deep breath. It didn't kill him. Instead, it sent his blood racing around with new energy. Slowly the moisture evaporated from his viewplates. Slowly he began to see.

He perceived that he was not alone. A group of people stood in front of him, respectful, their own eyes full of fear and wonder. Some one uttered a hoarse cry and pointed at his helmet. The unclouding of the viewplates must have stricken them with awe.

The air was wonderful to breathe. He would have liked to remove his helmet and fill his lungs with it unhampered, expose his face to its soft carress, expand his chest with the constriction of the suit. But these people—

They must have seen him tumble down from the sky and land unhurt. They carried food and flowers, and now they were kneeling down to him as to a—

Suddenly he realized. To them he was a god.

The thought of it made him weak. To Malevski and the ship's crew he was a criminal, a cheap chiseler and pickpocket, almost a murderer, escaping credit for *that* crime only by grace of his own good luck and his victim's thick skull. They had felt such contempt for him that they hadn't even bothered to guard him too carefully. They had thought him a complete coward, without the courage to risk an escape, without the intelligence to find the opportunities that might be offered to him.

They hadn't realized how terrified he was of the thing with which they threatened him. Regeneration, the giving up of his old identity? Not for him. They hadn't realized that he preferred the risks of a dangerous escape to the certainty of *that*.

And here he was a god.

He lifted his hand without thinking, to wipe away the perspiration that covered his forehead. But before the hand touched his helmet he realized what he was doing, and let the hand drop again.

To the people watching him the gesture must have seemed one of double significance. It was at once a sign of acceptance of their food and flowers, and their offer of good-will, and at the same time an order to withdraw. They bowed, and moved backwards away from him. Behind him they left their gifts.

They seemed human, human enough for the features on the men's faces to impress him as strong and resourceful, for him to recognize that the women were attractive. And if they were human, the food must be fit for human beings. Whether it was or wasn't, however, again he had no choice.

He waited until they were out of sight, and then, stiffly, he removed his helmet and ate. The food tasted good. And with his helmet off, with the wind on his face, and the woods around him whispering in his ears, it was a meal fit for the being they thought him to be.

He was a god. Possibly it was the space suit which made him one, especially the goggle-eyed helmet. He could take no chance of becoming an ordinary mortal, and that would mean that he would have to wear the space suit continually. Or at least the helmet. That, he decided, was what he would do. That would leave his body reasonably free, and at the same time impress them with the fact that he was different from them.

By manipulating the air valve he would be able to make the

viewplates cloud and uncloud at will, thus giving dramatic expression to his feelings. It would be a pleasant game to play until he had learned something of their language. It would be safer than trying to make things clear to them with speech and gestures that they could not understand anyway.

He wondered how long it would be before Malevski would find the shattered lifeboat drifting in space, and then trace its course and decide where he had landed. That would be the end of his divinity. Meanwhile, until then—

Until then he was a god. Unregenerated. Permanently unregenerated. Holding his helmet, he threw back his head and laughed loud and long, and wondered what his mother would have thought.

For awhile he was being left alone. They were afraid of him, of course, fearful of intruding with their merely mortal affairs upon the meditations of so divine a being. Later, however, curiosity and perhaps a desire to show him off to newcomers might draw them back. In the interval, it would be well to find out what sort of place this was in which he had landed.

He looked around him. There were trees, with sharp green branches, sharp green twigs, sharp red leaves. He shuddered as he thought of what would have happened to him if he had fallen on the point of a branch. The trees seemed rigid and unbending in the wind that caressed his face. There were no birds that he could see. Small black objects bounded from one branch to another as if engaged in complicated games of tag. He wondered if the games were as serious as the one he had been playing with Malevski, with himself as It.

There were no ground animals in sight. If any showed up later, they couldn't be too dangerous, not with the natives living here in such apparent peace and contentment. There probably wouldn't be anything that his pocket gun, which he had taken the precaution to remove from the lifeboat before that shattered, wouldn't be able to handle.

Near him was a strange spring, or little river, or whatever you might call it. It broke from the ground, ran along the hard rocky surface for a dozen feet, and then plunged underground again. There were other springs of a similar nature scattered here and there, and now he realized that their combined murmuring was the noise he had mistaken, on first removing his

helmet, for the rustle of the wind in the woods.

He would have enough to drink. The natives would bring him food. What else could any reasonable man want?

It wasn't the kind of life he had dreamed of. No Martian whiskey, no drugs, no night spots, no bigtime gamblers slapping him on the back and calling him "pal," no brassy blondes giving him the eye. Still, it was better than the life he had actually lived, much better. It would do, it would have to do.

From what he had seen of the natives, he liked them—and feared them. For all their mistaken faith in him, they seemed to be no fools. How many times before had men from some supposedly superior civilization dropped in upon the people of a new world and made that first impression of divinity, only to have the original attitude of worship by the natives give way to disillusion and contempt? Who was that fellow they told about in the history books he had read as a kid? Cortez, way back on Earth, when that planet itself had offered unexplored territory. And later on it had happened on one of the moons of Jupiter, and on several planets outside the System. The explorers had been gods, until they had been found out. Then they had been savage murderers, plunderers, devils.

It would be too bad if he were found out. He was one against them all, he would never be able to fight off so many enemies. More than that, he was a stranger here, he needed friends. No, he mustn't be found out.

"Better put on your helmet, dope," he told himself savagely. "They'll be coming back soon, and if they find you without it—" He put on his helmet, still muttering to himself. It wouldn't make any difference if he were overheard. They didn't know Earth language and would take his words for oracular utterances. He could talk to himself all he wanted, and from the looks of things, there would be no one to understand him. He hoped he didn't grow crazy and eccentric, like those hermits who had been lost alone in space for too many years.

The helmet was the first nuisance. There would be others too. He couldn't even talk in what had become his natural manner, with a whine in every word, a whine that came from being treated with contempt by police and fellow-criminals alike. A god had to speak with slow gravity, with dignity. A god had to walk like a god. A god had endless responsibilities here, it seemed.

He thought again of his mother. Ever since he could remember, it had been, "Georgie, wipe your nose!" and, "Georgie, keep your fingers out of the cake!" and Georgie do this and *don't* do that. A fine way to speak to a god. Even after he had grown up, his mother had continued to treat him like a baby. She had never got over examining his face and his ears and his fingernails to make sure that he had cleaned them properly. He couldn't so much as comb his hair to suit her; all through his abortive attempt at college, and later at a job, she had done it for him.

But she had been a lioness in his defense later on, when he had given way to that first irresistible impulse to dip his fingers in the till and get away with what he thought would be unnoticed petty cash. It had been her fault that the thing had happened, of course. She could have given him a decent amount of spending money, instead of doling it out to him from his own wages as if she were giving money for candy to a schoolboy. She could have treated him more like the man he was supposed to be.

Still, he couldn't complain. She had stuck to him all the way through, whatever the charges against him. When that lug of a traveling salesman had accused her Georgie of picking his pockets, and that female refugee from a TV studio had charged poor harmless Georgie with slugging her, it was his mother who had stood up in court and denounced them, and solemnly told judge and jury what a sweet, kind, helplessly innocent lamb her Georgie was. It wasn't her fault if no one had quite believed her.

Now he was on his own, without any possibility of help from her. And in what the ads called a "responsible position" that she had never so much as dreamed he could fill.

Unfortunately, now that he had reached so exalted a level, there seemed to be few possibilities of promotion. There appeared only the chance, on the one hand, that the natives would find him out and slaughter him, and on the other that Malevski would track him down and bring him back to Earth for the punishment he dreaded.

It was a good thing he had put on his helmet. Not far away, a group of the natives was approaching, laden with more food and flowers. It was larger than the previous group. Evidently, as he had anticipated, they were showing him off to newcomers.

He came to a stately halt and

waited for them to approach. He could see the surprise on their faces as they noted his change of costume, and he watched nervously as they stopped to whisper among themselves. It would be too bad for him if they didn't like it.

But they didn't seem to mind. One of them, a very impressive old man with green hair flecked with red, stepped in front of the others and made a speech, a melodious speech full of liquid sounds that were neither quite vowels nor consonants. He didn't have the slightest idea of what the individual words meant. But the significance of the speech as a whole was clear enough. As it came to an end, they presented him with more food and flowers.

Bradley cleared his throat. And then, with as deep and impressive a voice as he could manage, he said, "Ladies and gentlemen, it gives me great pleasure to accept your nomination. I promise you that if elected I shall keep none of my promises."

It was his first speech to them, and he enjoyed making it so much that every time he saw them during the next few days —they settled down to coming twice a day, morning and night —he made it again, with variations, listing the wonderful things he would do for them if elected to the office.

After awhile, as he began to enjoy the ceremony for its own sake, he didn't mind at all putting the helmet on for two short periods every day. Having so little contact with them, he could learn their language only very slowly. He could distinguish the word for flowers from that for food, although he himself could pronounce neither. He knew the names of a few plants, a few parts of the body. And he learned a few names of people. The red-green haired old man was, as close as he could make the sounds, Yanyoo. He took the trouble to notice that the prettiest girl was Aoooya.

At first everything had been exceedingly peaceful. But about a week after his arrival—he couldn't be sure exactly how many days had passed, because he hadn't kept count—he learned of some of the dangers they faced.

It was while they were holding the morning ceremony that the thing came out of the forest. At first he thought that a tree had moved. It was green, with reddish blotches like clusters of needle leaves, and it seemed to ooze forward toward them from among the trees. Aoooya noticed it first, and pointed and screamed. It was the size of a tiger, thought Bradley, and

might be even more dangerous. He had difficulty keeping his eyes on the rapidly moving creature through the goggles of his helmet. He was aware of gleaming eyes, of two rows of dull-green teeth, and of muscles that rippled under the green fur.

Several of the men had little blowpipes, through which they released a shower of darts. But the darts bounced off the fur, and the thing came on. Bradley fumbled for his gun, and almost dropped it in his excitement. When he finally brought it up into aiming position, his hand was trembling, and his finger could hardly catch the trigger.

The thing leaped into the air at the old man, Yanyoo, just as the gun went off. The body vaporized first, leaving for a fraction of a second the fierce head and the powerful legs apparently supporting themselves in the air. Then part of the head went, and the rest fell to the ground. But sheer momentum carried the green smoky vapor on, so that it surrounded first the old man, then several of the girls, and after them, Bradley himself. They were all yelling, all but Bradley, who put away his gun and muttered to himself in relief, and then the wind began to dissipate the vapor, and on the ground there was left only part of a head and six torn legs.

They were bowing to him and raising their voices high in thanks. It was easy, thought Bradley. Really, it was a cinch to be a god. The beasts that were such great dangers to them were mere trifles to him. To him, with a gun loaded with a thousand thermal charges each of which was capable of blasting armor plate. The thing wouldn't even have come close if he himself hadn't been such a timid, cowardly fool. Put Malevski in his place, and the detective would have got the creature as it came out of the trees. He wasn't Malevski.

It was a good thing for him that they couldn't know that. Now his position was completely secure. Now he could relax and enjoy his divine life.

He didn't realize that a much greater danger was yet to come. He found that out after the evening ceremony.

The group that came to see him this time was bigger than ever. Evidently, to honor him they had dropped all other work. Yanyoo seemed to have constituted himself Bradley's priest. He made a tremendously long and rhapsodic-sounding speech, but at the end there was no donation of the usual food and flowers. Instead, Yanyoo backed away, all the others doing the

same, and looking at Bradley as if expecting him to follow them.

He followed. In this manner, with his worshippers walking respectfully backwards, they arrived at what seemed to Bradley to be an ordinary small hut. Outside the hut was what he took for a curiously shaped log of wood. The inside of the hut was in shadow, but as his eyes became accustomed to the dimness, he saw something in one corner. It was a weird-looking head, also of wood.

It struck him then. The log of wood had been the old god, good enough to worship until he had come along and shown them what a god could really do. Now it had been contemptuously deposed and decapitated. The hut was a shrine. It was all his.

He *had* been promoted after all. The thought didn't please him in the least. Suppose *he* failed them too—and that was very possible, for he had no idea of what miracles they expected of him. Then he would be deposed and—he gagged at the thought, but he knew that he had to finish it—decapitated.

But for the moment there was no thought of deposing him. The gifts they offered were more lavish than ever. And in addition to the food and flowers, there was something new. A jug, filled with a warm, sweetish-smelling liquid. He could get the odor faintly through the intake valve of his helmet. Later on, when his worshippers were gone and he had his helmet off, he realized that it smelled up the entire hut.

It couldn't be harmful. Nothing that they had offered him so far was harmful. He took a sip —and sighed with content. This was one of the few things he had been lacking. There was alcohol, and there were flavors and essences that reminded him of the drinks he had encountered on a dozen planets. But this was first class stuff, not diluted or adulterated with the thousand and one synthetics that were put in to stretch a good thing as far as it could go.

Without realizing the danger, he downed the entire contents of the jug.

He felt good. He hadn't felt so good in years, not since his mother had made him a special cake for his birthday when he was—let me see now, was it eight or nine? No matter, it had been many years ago, and the occasion had been notable for the fact that she had let him drink some of the older people's punch, made with a tiny bit of some alcoholic drink. He felt *very* good. He picked up his helmet and put it on his head, and stuck the stem of a green flower rak-

ishly through the exit valve of the helmet, so that the flower seemed to dance every time he exhaled, and staggered out of his hut.

He was fortunate that it was dark. "I'm drunk," he told himself. "Never been so drunk in my life. Never felt so good. Mother never felt so good. Malevski never felt so good."

He passed a shadowy figure in the dark and said, "Hiya, friend and worshipper. Ever see a god drunk before?"

The figure bowed, and kept its head lowered until he had moved on.

"Drunk or sober, I'm shtill divine," he said proudly. And he began to sing, loudly and impressively, his voice orchestral in his own ears within the confines of the helmet. "Ould Lang Shyne, she ain't what she ushed to be, ain't what she ushed to be—" The words came easily, and as it seemed, naturally to his lips.

After awhile, however, he tired of them. After awhile he found that his legs had tired of them. He sat down with a thump under a spiky tree and said solemnly, "Never felt so good in my life. Never felt so happy — it's a lie. I don't feel good."

He didn't, not any more. He felt sick to his stomach. A touch of sober thought had corroded the happiness of his intoxication, and he was sick and afraid. Today their god was a hero, today they would forgive him everything. But did they actually *prefer* a drunken god? No. Drunkenness made a god human, all too human. A drunken god was a weak god, and his hold on his worshippers was their belief in his strength. As he valued his life, he must get drunk no more.

"Ain't gonna get drunk no more, no more," he sang sadly and solemnly to himself, and finally he fell asleep.

He awoke with a hangover and a memory. He was not one of those men who when sober forget all they have done when drunk. He remembered everything. And he knew that he must put drunkenness away from him.

That morning they brought him only food and flowers. But at the evening ceremony they presented him once more with a jug of liquor as an additional reward for his destruction of the deadly beast. For the first time, Bradley took an active part in the ceremony. He held up the jug and said in grave tones, "In the name of Carrie Nation, I renounce thee and all thy works."

Then he poured out the liquor and smashed the jug on the ground.

After that, the smashing of the jug was part of the cere-

mony of worshipping him. It left him unhappy at first, but sober. After awhile, the unhappiness disappeared, but the soberness remained. From now on, he would act as a god should act.

The natives were not stupid, he saw that very clearly. The first jugs they had offered him had been beautiful objects, of excellent workmanship. But when they perceived that the only use he had for them was to break them, the quality deteriorated rapidly. Now the jugs they brought him were crude things indeed, made for the sole purpose of being smashed. He wondered how many other tribes had tricked their gods similarly.

No, they were not at all stupid. It struck him that with such advantages of civilization as he himself had enjoyed, they would have gone much further than he did. Two weeks or so after he had come down from the sky to be their god, he saw that they had learned from him. One of the young men appeared during the day wearing a wooden helmet. It was a helmet obviously patterned after his own, although it had no glass or plastic, and the openings in front of the eyes were left blank. The mythical Earth-hero, Prometheus, had brought fire down from the skies. He had brought the Helmet. He was Bradley, the Helmet-Bringer.

Even at that he had underestimated his worshippers. He had thought at first that the helmets were meant merely for ornament and decoration. He learned better one day when a swarm of creatures like flying lizards swept down out of a group of trees in a fierce attack. He had not known that such creatures existed here, and now that he saw them, he realized how fortunate it was that they were not more numerous. They had sharp teeth and sharper claws, and they tore at his head with a ferocity that struck fear into his heart. His gun was of less use than usual against them. He could catch one or two, but the others moved too swiftly for him to aim.

By this time, others of the natives wore wooden helmets, and he could see how the sharp claws ripped splinter after splinter from them. But the birds or lizards, or whatever they were, didn't go unscathed. From a sort of skin bellows, several of the natives blew a gray mist at them, and where the mist made contact with the leather skin, the flying creatures seemed to be paralyzed in mid-flight, and they fell to the ground, where they were easily crushed to death. By the time they had given up the fight and fled, half a dozen of them were lying dead.

They were evidently useless

for food because of the poison they contained. He was surprised to see, however, that the natives still had a use for them. They dragged the dead creatures into a field of growing crops, and left them there to rot into fertilizer.

But such incidents as this, he found, were to be rare. For the most part, the life here was peaceful, and he found himself liking it more and more. Now, without laughter, he wondered again what his mother would have thought of him.

She would have been proud. He realized now that she had done her best for him. And when every one else had given up hope for him, she had not. Perhaps she had protected him too much—but she had early learned the need for protection. He could look at her now in a new light. Her own father had died early in life, and then her husband soon after her son had been born. She had faced a tough fight, and had thought to spare him what she herself had gone through. Too bad she hadn't realized exactly what she was doing. She was bringing him up with the ability, as the old epigram had it, to resist everything but temptation.

The temptation to steal that petty cash, to put his hands into a drunk's pocket and lift the man's wallet, to lie to a pretty girl, to slug a helpless victim—he had resisted none of them. He had resisted nothing until that day he had poured the jugful of liquor on the ground and smashed the jug itself.

But could he blame his mother for all that? It had all been his own fault.

And it would be his own fault if he failed to resist the new temptation that now reared its pretty head—Aoooya. She had taken to coming to his hut-shrine for a private little ceremony of her own. You might almost have thought that she had fallen in love with him as an individual. He wondered whether she had been impressed by his helmet. Did she take that to be his actual head? No, of course not. They had made helmets for themselves, therefore they knew that the thing he wore was also a helmet. Perhaps they knew more about him than he thought.

But they continued to worship him, that was the main thing. And Aoooya brought him, every day, little presents, special flowers and food delicacies, that argued a personal affection.

This was a danger that he recognized from the beginning. Perhaps a god *might* fall in love with a mortal without losing his godliness. Perhaps. It had happened before. But, however the

rest of the tribe might react to the idea, Bradley had noticed one young man who liked to stay near the girl, and he knew that this rival wouldn't take kindly to it at all. He might resent the god's behavior. And what happened when these people didn't like the way a god behaved? Why, they struck his head off.

The god might act first, of course. The young man wouldn't stand a chance against him if he used his gun. In fact, Bradley could blast the other man unobserved, make him disappear into vapor, without leaving any traces of how he died. That was murder, but if a god couldn't get away with murder, what sort of god was he? A pretty poor, cheap sort indeed. Yes, he could make his own rules.

And he could go on, maintaining his godhood by little murders of that sort, and other deadly miracles, until they hated him more than they loved him. That would follow inevitably. And then, when they all hated him, not even his gun would save him. Then—

"You're a liar," he told himself fiercely. "That isn't the thing you're afraid of. Your weakness is that you don't have a murderous nature. You could kill one or two of them and get away with it, and you'd be able to control yourself and kill no more. That time you hit the man over the head, you didn't intend to kill him either. You were more frightened, at first, anyway, by the thought that you might have killed him, than by the danger of being caught. You were overjoyed when he lived.

"You hate to kill, that's your trouble. You've had a sense of responsibility all along, but it never had a chance to develop. Now it's developed. You feel responsible for these people, for Aoooya and for the rest of them. That's why you can't take advantage of them. You've been posing as a rebel all your life, and you're just a respectable, law-abiding citizen at heart."

He winced at the thought. His own society had never accepted him at his own valuation. This one took him for a much greater being than he took himself, and there seemed to be nothing to do but to live up to what he was expected to be.

All the same, Aoooya continued to be a tempting morsel, and sooner or later, he feared, he would not be able to resist her. And then the planet itself provided a diversion.

They had never seen such a thing and had no idea of what it presaged, but he knew. He had heard of it on Earth and on Venus, and he had seen it on

other planets where the rock formations had not yet settled down. A little hollow appeared first in the ground, and then the hollow was pushed out and suddenly blown into the air. Steam whistled through the newly made vent, a shower of steam and hot dust and red hot fragments of rock. Slowly the vent grew, until the cloud from the terrifying geyser darkened the sky and spread panic through the tribe.

He knew what would happen next. They were running around in terror, but not for one moment was he himself in doubt. He donned his complete space suit, in order to impress them the more, then stalked into the middle of them, and said, "Pick up all your possessions and follow me."

They stared at him, and he showed them what he meant by picking up the belongings of one household in his gloved hands, and handing them to a waiting woman. Then, when they had grasped the idea and were gathering all they owned, he led them toward the safety of the trees. Five minutes after they had set off, the lava began to flow from the new-born volcano, scorching the ground for a hundred yards around, sparks smoking and smoldering in the treetops.

The head start he had given them was enough to help them escape the resultant forest fire. All that day they traveled, until finally they came to a forest which couldn't burn, and here they rested. And here they settled down to build their lives anew.

It must have been a comfort to know that a god had led them to safety and was helping them make the new start. Bradley helped them with his gun, which blasted dangerous beasts, and even more with his slightly superior knowledge. He showed them how to fashion tools from stone and how to use these to build better huts. He taught them how to make swords and other weapons, so that henceforth they wouldn't be forced to rely for defense on poison alone. He was the most industrious god since Vulcan. And in helping them he found that he had no time for Aoooya.

Came the day when the new village settled down to its changed routine of life. The morning ceremony before his new shrine had just been completed, but Bradley was not satisfied. Something was wrong. Yanyoo's demeanor, Aoooya's—

With a shock, Bradley realized what it was. From old Yanyoo down the line, none of the natives seemed to have their original fear of him. There was respect, there was affection, certainly,

but the respect and affection were those due an older brother rather than a god.

And he was not displeased. Being a god had been a wearying business. Being a friend might be a great deal more pleasant. Yes, the change was something to be happy about.

But he had little time to be happy. For that same morning, there came what he had so long dreaded. Out of a clear, shipless sky, Malevski appeared, strolling toward him as casually as if he had been there all along, and said, "Nice little ceremony you have here."

"Hello, Malevski. Don't give me the credit. They thought it up."

"Ingenious. Almost as ingenious as the way they've used the help you gave them. We had this tribe listed long ago as a very capable one, far behind the rest of its System in development, it's true, but only because it had started late up the evolutionary ladder. It had been doing very nicely on its own, and we didn't want to interfere unless we could give it some real help.

"I'll admit that I had a few qualms at first, when we traced you here and learned that you had landed among them. But we've been observing you for the past day and a half—our space ship landed beyond that burned out stretch of ground, not too close to that volcano—and I'll have to admit that, judging from your past record, I didn't think you had it in you."

"I suppose that's over with now," said Bradley.

"Yes, you're finished with being a god. We don't believe in kidding the natives, Bradley!"

Bradley nodded ruefully. "They don't seem to believe in it, either. I guess they found out I wasn't a god before I did. But it didn't seem to matter to them." He sighed, and turned toward the new village. "Do you mind, if I sort of—well, hold a farewell ceremony before we go? They won't understand, but they'll feel better than if I just go off. . ."

Malevski shook his head firmly. "No, no time for that. I'll have to get out a full report, and we're in a hurry to get off. Any word you'd like to have sent out to your mother, Bradley, before we blast?"

Bradley looked back again, and his shoulders came up more firmly. He'd taught his people here, and led them; but he'd learned a few things himself—he'd found he could take what was necessary. He'd found that the easiest way wasn't always

the best, that getting drunk was no way out, and that real friendship and respect meant more than the words of big-shots. Maybe he'd learned enough to be able to take regeneration. . .

He managed to grin, a little lop-sidely, at Malevski. "Yeah. You might send her a message. Tell her I'm fine, and that I've learned to wipe my own nose. I think she'll be glad to hear that."

"She will," Malevski told him. "When she hears that you're Provisional Governor of this planet, she'll even believe it."

"Provisional Governor?" Bradley stood with his mouth open, staring. He shook his head. "But what about regeneration. . .?"

Malevski laughed. "You're appointed, on the basis of my first report about what you're doing here, Bradley," he answered. "As to regeneration . . . well, you think about it, while we bring in the supplies, we're supposed to leave for you, before we blast out of here."

He went off, chuckling, towards his ship, leaving Bradley to puzzle over it.

Then, just as Malevski disappeared, he understood. Damn it, they'd tricked him! They'd left him here where he had to be a god and assume the responsibilities of a god. And through that, he'd been regenerated—completely, thoroughly regenerated!

Suddenly, he was chuckling as hard as Malevski as he swung around and went back to face his former worshippers. And they were coming forward to meet him, their friendly smiles matching his own.

COMING EVENTS

Next month is the final issue of Volume I, and we think you'll find it an unusually good number. After six years absence from science fiction, T. L. Sherred is back with CUE FOR QUIET as our second serial—so unusual that we've had to label it a SPACE SPECIAL! We're extremely proud to bring it to you. With it, we have an exceptionally well-done story by a comparatively new writer, Philip K. Dick. SECOND VARIETY is a story of the next war—but it takes place after the real shooting is all over, when the troubles are just beginning; and it's *not* a story of politics, or of our barbarous descendants! The short stories that fill the issue are up to the same standard. If you miss it, we modestly think you're slightly insane—and again, why not subscribe while you think of it?

BOOK REVIEWS:

SCIENCE: Fact and Fiction

by

GEORGE O. SMITH

There is one school of the lit'r'y that holds that the popular adventure type of story can not possibly be of lasting value. Unless the opus is fraught with social significance or serious meaning, they feel that the writing is vulgar and mundane and therefore destined for oblivion once the tale has served its piece of mere entertainment. Having read a few of the plotless little horrors these lit'r'y lights favor, I am glad to be an old space man from wayback.

As a defense against these crackpots who revel in precious writing and the so delicate nuances of human motivation, I point to an old classic written by Alexander Dumas, entitled The Three Musketeers.

As I recall the piece, our pals Porthos, Athos, Aramis, and D'Artagnan spent a hundred thousand words of fine adventure. They thrust a mean sword, quaffed flacons of ale, pitched woo, and generally raised hell riding up and down the breadth of France. Freud had not been invented yet, so their motivations were simple things like getting enough to eat and fighting for what they thought was right. And if anybody thinks that John Carter, the Warlord of Barsoom, skewered any more enemies than our four heroes, I suggest that somebody try a recount.

Slip 'em a spacecraft and a deLameter instead of a horse and a rapier and we have the makings of a rollicking space opera.

There is one other difference. Our Three Musketeers did not unfrock Cardinal Richelieu. They did not take off in a caravel to discover Manhattan. Nor did they cause any change in the social structure or the governmental set-up. Seems to me they left the world in about as big a mess as they found it, which is a bit of verisimilitude seldom read in science fiction today.

Of course, one can always say that the Days of Cardinal Richelieu and The Three Musketeers were exciting times.

Echo answers: "What times aren't exciting?"

GUNNER CADE, by Cyril Kornbluth. Simon & Schuster, $2.75 • Is a case in point. Here we have a governmental set-up of the flimsiest construction, hastily pasted together with a series of meaningless litanies all concerned with the horrors of some long-forgotten war. The major offenders consist of a cult of paid warriors, sworn to eternal celibacy (They do not even go to bed with their shooting irons, although they make love to them between eight and eight-thirty every morning.) and also sworn to conduct their little private wars in accordance with a strict code of ethics.

Our Hero, Gunner Cade, finds himself being pushed around in an inexplicable manner, and so he goes out and pulls the whole cockeyed social and cultural structure down around everybody's ears. He also discovers to his horror that the Master Gunner has discovered (Oh Fie!) Sex, and is Shacking Up with a Woman.

Gunner Cade's identity is denied, his future ruined, and all is lost. He joins the rebels, goes to Mars, decides that the Master Gunner may have had a point in this Sex business, and the opus winds up with the last stand of the Minute Men called out to defend Mars against the Redcoats.

Cyril Judd can do better. I know they can.

FOUNDATION & EMPIRE, by Isaac Asimov. Gnome Press, $2.75 • This is the second in the long-remembered "Foundation" series, and is therefore Isaac Asimov's second step towards infinity. Hari Seldon, dead and gone these many hundreds of years, is still the oracle of psychohistory. But Hari Seldon's statistical analyses go awry by the introduction of events and people for which no amount of extrapolated data could provide.

Isaac Asimov's writing is polished and his plotting is good, but somehow a prediction of the future of ten thousand years hence and a few thousand light years across the galaxy seems of less interest than the fact that we, the human race, stand looking at the nearer chunks of celestial real estate and wonder just how long it is going to be. Of course, at the time the Foundation Series was written, it was fashionable to get as far away from the Earth as your typewriter could take you. The same plotline, run off a few hundred years hence right here in our own neck of the Galaxy, would have been a lot closer to our own personal interests.

CITY, by Cliffton Simak. Gnome Press, $2.75 • This is a collection of Simak's novelettes in Astounding, dealing with the fall of Man and the rise of Dog as the ruling intelligence of the Earth.

The stories have a nostalgic air; that of an old man reminiscing of

the happy days of his vigorous youth and fondly regretting that he had not had more vigorous youth in which to do more. The novelettes are neatly cemented together by transition pieces so that they do not really appear as a collection of separate novelettes, these transition pieces are written by a Dog, who is not really convinced that Man ever existed. The Dog's theory is that Man is no more than a god-like mythological critter cooked up by his ignorant ancestors to explain the wonders of nature. The Dog is presenting these stories to the rest of the Dogs as a collection of myths.

The effect is pleasing to us Dogs.

PRISONER IN THE SKULL, by Charles Dye. Abelard, $2.50 • In contrast to the open-faced, quiet development of the Simak opus, this job is a tightly wound suspense story. The action moves fast; sometimes it moves faster than the reader can, which is not bad because the protagonist is not always sure himself of what is going on.

Alister Conrad regains consciousness after a hunting accident in a state of complete amnesia. From the identification stuff in his wallet, he succeeds in locating his proper background. And from this moment on Alister Conrad is in trouble. Hoping to re-orient his fogged brain, they try encephalographic means and discover that Conrad's mind does not give out with the proper curves. This places Conrad in the unique position of being "blank" to any possible mindreader. Evidence is that there is a mindreader trying to get control of the Earth. Conrad is given the job of tracking down this menace because he is the only man on Earth who can approach the mindreading supercrook with murder in his mind. All other attempts have failed with the death of the detective.

I wouldn't spoil a good whodunit by hinting at the end, except to state that it is not what you would expect.

ROCKET JOCKEY, by Philip St. John. Winston, $2.00 • This is another juvenile from the Winston press, and it shows a bit more of the old "Get up and go!" than the earlier books. The theme of the tale is a spacecraft race across the solar system, which Philip St. John seems to have laid out in a rather logical fashion.

Obviously, any straightaway speed race would go to the ship and the crew that could stand the highest acceleration for the longest time. St. John has set up the requirements of the space race (The Armstrong Classic) so that not only stamina and engineering count, but also the ability to compute and astrogate. To say nothing of being able to handle intrigue, politics, and other man-made nuisances.

One excellent point is the differences in attitude and human nature of the people (all originally Earthmen) who now live on the several

habitable planets. Enviroment does cause differences in attitude.

One poor point is where Philip St. John violates our knowledge of thermodynamics in inventing a rocket fuel that delivers a higher exhaust-velocity at a lower temperature. This he does willingly, deliberately and with premeditation. It has been the practise with the earlier Winston Books to point out such purely science *fiction* gimmicks in a glossary or explanation so that the youngster reading the things will not collect an erroneous idea. It should have been adhered to here.

PHYSICS AND MEDICINE OF THE UPPER ATMOSPHERE, A Symposium. The University of New Mexico Press, $10.00 • This volume is sub-titled "A Study Of The Aeropause" which is a newly-coined term designating the region of the upper altitudes where the atmosphere thins out and becomes space. The Aeropause is at present not clearly defined in terms of miles of altitude, or air-pressure, or even stated in the number of atmospheric molecules per cubic centimeter because no such boundary can be agreed upon yet. However, it is generally accepted that the aeropause is the region in which the successful invasion by man and machine must depend upon the smooth blending of many sciences.

The book is a symposium of lectures, panel discussions, and opinions of thirty eight learned students of the upper reaches of altitude. The subjects range from discussions of the nuclear transformations that take place in the upper air due to the solar bombardment to the probable effects of weightlessness on the orientation of the human senses over a long period of time. There are charts, pictures, graphs, and equations to support the facts or opinions of the writers. Also present is the frequently repeated modifier: "In my opinion—" or: "I believe—" which is often missing in the more popular works; such qualifiers help to separate cold fact from personal conviction.

It is an incredible amount of fact that has been collected in the short years since Space Travel became a subject to be treated seriously. No doubt there is a vast amount still kept under the wrap of Security. About the only way to keep up with this Space business is to wade through these heavy tomes and skim off the wealth of hitherto unprinted information they contain. Otherwise we who have been dreaming, writing, and reading about space for years will someday wake up and find that the First Orbital Station has been installed and is a working proposition. Me, I'd prefer to look my informant in the eye and nod sagely, saying: "Oh yes, I know!"

In closing, I return to where I started out, with one last observation on Alex Dumas. He wrote a darned fine adventure yarn, but he apparently couldn't count above Three. Let's forgive his science and read his adventure, huh?

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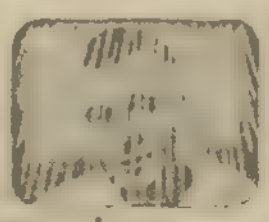
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CONCLUSION

When a wild uprising on a planet like Ullr adds plutonium bombs to the geek warfare, it takes something of a miracle to save the pieces. Or a historical novelist with a female passion for research. . . .

Synopsis: General CARLOS VON SCHLICHTEN *is in charge of troops on Ullr, where the native "geeks" are being stirred up to revolt by the Mad Prophet,* RAKKEED. *These natives are something like hermaphroditic, four-armed lizards, with a silicone metabolism that makes them really tough. Von Schlichten and his assistants, Quong and Bogdanoff, rescue* PAULA QUINTON *from a geek attack. She has come to Ullr to work for the geeks, after having stopped over at another wild planet, Niflheim, where Terrans are atom-mining for metals.*

Von Schlichten tries to warn Governor-General SIDNEY HARRINGTON *of the coming revolt, but is laughed down, and sent to Skilk City with Paula Quinton. On the way, he stops off to see* KING KANKAD, *head of the Kragans, the only completely loyal natives on Ullr. After partly convincing her the natives are dangerous, except for the Kragans, they go on to Skilk, where news reaches them that Harrington has been poisoned. The revolt gets under way at once.*

Von Schlichten manages to defend Skilk and carry successful war against its local king, whom he defeats. He thus becomes ruler of Skilk, as well as Governor of Ullr for the emergency. But while he has ended the siege at Skilk, it is going on hotly elsewhere. At Konkrook, where the headquarters of the Ullr Company are located on Gongonk Island, the Terrans are having trouble. And worst spot of all is in Keegark, where King Orgzild and Prince Gorkrink are gaining the upper hand. They must be put down, if the Ullr Company is to retain control of Ullr. Without such control, all Terrans will probably starve before the next supply ship from Earth can reach them.

Von Schlichten regrets that they can't use atomic bombs against the geeks, but he knows what a mess such weapons made on Earth once, and cannot take the responsibility.

Then Paula Quinton remembers that Prince Gorkrink of Keegark was working at his own volition on the planet Niflheim —and could understand Lingua Terra. He could have learned all about how to make such atomic bombs under the direction of Laurenço Gomes!

Von Schlichten rushes back to Konkrook at once, sick with the threat that hangs over them if the geeks get atomic bombs...

It was full dark when Konkrook came in view beyond the East Konk Mountains, a lurid smear on the underside of the

clouds, and at Gongonk Island and at the Company farms to the south, a couple of bunches of searchlights were fingering about in the sky. When von Schlichten turned on the outside sound-pickup, he could hear the distant tom-tomming of heavy guns, and the crash of shells and bombs. Keeping the car high enough to be above the trajectories of incoming shells, Harry Quong circled over the city while Hassan Bogdanoff talked to Gongonk Island on the radio.

The city was in a bad way. There were seventy-five to a hundred big fires going, and a new one started in a rising ball of thermoconcentrate flame while they watched. The three gun-cutters, *Elmoran*, *Gaucho* and *Bushranger*, and about fifty big freight lorries converted to bombers, were shuttling back and forth between the island and the city. The Royal Palace was on fire from end to end, and the entire waterfront and industrial district were in flames. Combat-cars and airjeeps were diving in to shell and rocket and machine-gun streets and buildings. He saw six big bomber-lorries move in dignified procession to unload, one after the other, on a row of buildings along what the Terrans called South Tenth Street, and on the roofs of buildings a block away, red and blue flares were burning, and he could see figures, both human and Ullran, setting up mortars and machine-guns.

Landing on the top stage of Company House, on the island, they were met by a Terran whom von Schlichten had seen, a few days ago, bossing native labor at the spaceport, but who was now wearing a major's insignia. He greeted von Schlichten with a salute which he must have learned from some movie about the ancient French Foreign Legion. Von Schlichten seriously returned it in kind.

"Everybody's down in the Governor-General's office, sir," he said. "Your office, that is. King Kankad's here with us, too."

He accompanied them to the elevator, then turned to a telephone; when von Schlichten and Paula reached the office, everybody was crowded at the door to greet them: Themistocles M'zangwe, his arm in a sling; Hans Meyerstein, the Johannesburg lawyer, who seemed to have even more Bantu blood than the brigadier-general; Morton Buhrmann, the Commercial Superintendent; Laviola, the Fiscal Secretary; a dozen or so other officers and civil administrators. There was a hubbub of greetings, and he was pleased to detect as much real warmth

from the civil administration crowd as from the officers.

"Well, I'm glad to be back with you," he replied, generally. "And let me present Colonel Paula Quinton, my new adjutant; Hideyoshi O'Leary's on duty in the North. . . Them, this was a perfectly splendid piece of work, here; you can take this not only as a personal congratulation, but as a sort of unit citation for the whole crowd. You've all behaved above praise." He turned to King Kankad, who was wearing a pair of automatics in shoulder-holsters for his upper hands and another pair in cross-body belt holsters for his lower. "And what I've said for anybody else goes double for you, Kankad," he added, clapping the Kragan on the shoulder.

"All he did was save the lot of us!" M'zangwe said. "We were hanging on by our fingernails here till his people started coming in. And then, after you sent the *Aldebaran*. . ."

"Where is the *Aldebaran*, by the way? I didn't see her when I came in."

"Based on Kankad's, flying bombardment against Keegark, and keeping an eye out for those ships. Prinsloo caught the *De Wett* in the docks there and smashed her, but the *Jan Smuts* got away, and we haven't been able to locate the *Oom Paul Kruger*, either. They're probably both on the Eastern Shore, gathering up reenforcements for Orgzild," M'zangwe said.

"Our ability to move troops rapidly is what's kept us on top this long, and Orgzild's had plenty of time to realize it," von Schlichten said. "When we get *Procyon* down here, I'm going to send her out, with a screen of light scout-vehicles, to find those ships and get rid of them. . . How's Hid been making out, at Grank, by the way? I didn't have my car-radio on, coming down."

That touched off another hubbub: "Haven't you heard, general?" . . . "Oh, my God, this is simply out of this continuum!" . . . "Well, tell him, somebody!" . . . "No, get Hid on the screen; it's his story!"

Somebody busied himself at the switchboard. The rest of them sat down at the long conference-table. Laviola and Meyerstein and Buhrmann were especially obsequious in seating von Schlichten in Sid Harrington's old chair, and in getting a chair for Paula Quinton. After awhile, the jumbled colors on the big screen resolved themselves into an image of Hideyoshi O'Leary, grinning like a pussycat beside an empty goldfish-bowl, licking its chops.

"Well, what happened?" von Schlichten asked, after they had exchanged greetings. "How did Yoorkerk like the movies? And did you get the *Procyon* and the *Northern Lights* loose?"

"Yoorkerk was deeply impressed," O'Leary replied. "His story is that he is and always was the true and ever-loving friend of the Company; he acted to prevent quote certain disloyal elements unquote from harming the people and property of the Company. *Procyon's* on the way to Konkrook. I'm holding *Northern Lights* here and *Northern Star* at Skilk; where do you want them sent?"

"Leave *Northern Star* at Skilk, for the time being. Tell the Company's great and good friend King Yoorkerk that the Company expects him to contribute some soldiers for the campaign here and against Keegark, when that starts; be sure you get the best-armed and best-trained regiments he has, and get them down here as soon as possible. Don't send any of your Kragans or Karamessinis' troops here, though; hold them in Grank till we make sure of the quality of Yoorkerk's friendship."

"Well, general, I think we can be pretty sure, now. You see, he turned Rakkeed the Prophet over to me. . ."

"*What?*" Von Schlichten felt his monocle starting to slip and took a firmer grip on it. "Who?"

"Pay me, Them; he didn't drop it," Hideyoshi O'Leary said. "Why, Rakkeed the Prophet. Yoorkerk was holding our ships and our people in case we lost; he was also holding Rakkeed at the Palace in case we won. Of course, Rakkeed thought he was an honored guest, right up till Yoorkerk's guards dragged him in and turned him over to us. . ."

"That geek," von Schlichten said, "is too smart for his own good. Some of these days he's going to play both ends against the middle and both ends'll fold in on him and smash him." A suspicion occurred to him. "You sure this is Rakkeed? It would be just like Yoorkerk to try to sell us a ringer."

O'Leary shook his head solemnly. "I thought of that, right away. This is the real article; Karamessinis' Constabulary and Intelligence officers certified him for me. What do you want me to do, send him down to Konkrook?"

Von Schlichten shook his head. "Get the priests of the locally venerated gods to put him on trial for blasphemy, heresy, impersonating a prophet, practicing witchcraft without a license, or any other ecclesiastical crimes you or they can think of.

Then, after he's been given a scrupulously fair trial, have the soldiers of King Yoorkerk behead him, and stick his head up over a big sign, in all native languages, 'Rakkeed the False Prophet.' And have audio-visuals made of the whole business, trial and execution, and be sure that the priests and Yoorkerk's officers are in the foreground and our people stay out of the pictures."

"Soap and towels, for General Pontius von Pilate!" Paula Quinton called out.

"That's an idea; I was wondering what to give Yoorkerk as a testimonial present," Hideyoshi O'Leary said. "A nice thirty-piece silver set!"

"Quite appropriate," von Schlichten approved. "Well, you did a first-class job. I want you back with us as soon as possible —incidentally, you're now a brigadier-general—but not till the situation Grank-Krink-Skilk is stabilized. And, eventually, you'll probably have to set up permanent headquarters in the North."

After Hideyoshi O'Leary had thanked him and signed off, and the screen was dark again, he turned to the others.

"Well, gentlemen, I don't think we need worry too much about the North, for the next few days. How long do you estimate this operation against Konkrook's going to take, to complete pacification, Them?"

"How complete is complete pacification, general?" Themistocles M'zangwe wanted to know. "If you mean to the end of organized resistance by larger than squad-size groups, I'd say three days, give or take twelve hours. Of course, there'll be small groups holding out for a couple of weeks, particularly in the farming country and back in the forest. . ."

"We can forget them; that's minor-tactics stuff. We'll need to keep some kind of an occupation force here for some time; they can deal with that. We'll have to get to work on Keegark, as soon as possible; after we've reduced Keegark, we'll be able to reorganize for a campaign against the Free Cities on the Eastern Shore."

"Begging your pardon, general, but reduce is a mild word for what we ought to do to Keegark," Hans Meyerstein said. "We ought to raze that city as flat as a football field, and then play football on it with King Orgzild's head."

"Any special reason?" von Schlichten asked. "In addition to the Blount-Lemoyne massacre, that is?"

"I should say so, general!"

Themistocles M'zangwe backed Meyerstein up. "Bob, you tell him."

Colonel Robert Grinell, the Intelligence officer, got up and took the cigar out of his mouth. He was short and round-bodied and bald-headed, but he was old Terran Federation Regular Army through and through

"Well, general, we've been finding out quite a bit about the genesis of this business, lately," he said. "From up North, it probably looked like an all-Rakkeed show; that's how it was supposed to look. But the whole thing was hatched at Keegark, by King Orgzild. We've managed to capture a few prominent Konkrookans"—he named half a dozen—"who've been made to talk, and a number of others have come in voluntarily and furnished information. Orgzild conceived the scheme in the beginning; Rakkeed was just the messenger-boy. My face gets the color of the Company trademark every time I think that the whole thing was planned for over a year, right under our noses, even to the signal that was to touch the whole thing off. . ."

"The poisoning of Sid Harrington, and our announcement of his death?" von Schlichten asked.

"You figured that out yourself, sir? Well, that was most of it."

Grinell went on to elaborate, while von Schlichten tried to keep the impatience out of his face. Beside him, Paula Quinton was fidgeting, too; she was thinking, as he was, of what King Orgzild and Prince Gorkrink were doing now. "And I know positively that the order for the poisoning of Sid Harrington came from the Keegarkan Embassy, here, and was passed down through Gurgurk and Keeluk to this geek here who actually put the poison in the whiskey."

"Yes. I agree that Keegark should be wiped out, and I'd like to have an immediate estimate on the time it'll take to build a nuclear bomb to do the job. One of the old-fashioned plutonium fission A-bombs will do quite well."

Everybody turned quickly. There was a momentary silence, and then Colonel Evan Colbert, of the Fourth Kragan Rifles, the senior officer under Themistocles M'zangwe, found his voice.

"If that's an order, general, we'll get it done. But I'd like to remind you, first, of the Company policy on nuclear weapons on this planet."

"I'm aware of that policy. I'm also aware of the reason for it. We've been compelled, because of the lack of natural fuel on Ullr, to set up nuclear power re-

actors and furnish large quantities of plutonium to the geeks to fuel them. The Company doesn't want the natives here learning of the possibility of using nuclear energy for destructive purposes. Well, gentlemen, that's a dead issue. They've learned it, thanks to our people on Niflheim, and unless my estimate is entirely wrong, King Orgzild already has at least one First-Century Nagasaki-type plutonium bomb. I am inclined to believe that he had at least one such bomb, probably more, at the time when orders were sent to his embassy, here, for the poisoning of Governor-General Harrington."

With that, he selected a cigarette from his case, offered it to Paula, and snapped his lighter. She had hers lit, and he was puffing on his own, when the others finally realized what he had told them.

"That's impossible!" somebody down the table shouted, as though that would make it so. Another—one of the civil administration crowd—almost exactly repeated Jules Keaveney's words at Skilk: "What the hell was Intelligence doing; sleeping?"

"General von Schlichten," Colonel Grinell took oblique cognizance of the question. "You've just made, by implication, a most grave charge against my department. If you're not mistaken in what you've just said, I deserve to be court-martialed."

"I couldn't bring charges against you, colonel; if it were a court-martial matter, I'd belong in the dock with you," von Schlichten told him. "It seems, though, that a piece of vital information was possessed by those who were unable to evaluate it, and until this afternoon, I was ignorant of its existence. Colonel Quinton, suppose you repeat what you told me, on the way down from Skilk."

"Well, general, don't you think we ought to have Dr. Gomes do that?" Paula asked. "After all, he constructed those bombs on Niflheim, and it'll be he who'll have to build ours."

Von Schlichten nodded in instant agreement.

"That's right." He looked around. "Where's Dr. Lourenço Gomes, the nuclear engineer who came in on the *Pretoria*, two weeks ago? Send out for him, and get him in here to me at once."

There was another awkward silence. Then Kent Pickering, the chief of the Gongonk Island power-plant, cleared his throat.

"Why, general, didn't you know? Dr. Gomes is dead. He was killed during the first half hour of the uprising."

XI

He flinched inwardly, and tightened his eye-muscles on the edge of the monocle to keep them from flinching physically as well, trying to freeze out of his face the consternation he felt.

"That's bad, Kent," he said. "Very bad. I'd been counting heavily on Dr. Gomes to design a bomb of our own."

"Well, general, if you please." That was Air-Commodore Leslie Hargreaves. "You say you suspect that King Orgzild has developed a nuclear bomb. If that's true, it's a horrible danger to all of us. But I find it hard to believe that the Keegarkans could have done so, with their resources and at their technological level. Now, if it had been the Kragans,. that would have been different, but. . ."

"Paula, you'd better carry on and explain what you told me, and add anything else you can think of that might be relevant . . . Is that sound-recorder turned on? Then turn it on, somebody; we want this taped."

Paula rose and began talking: "I suppose you all understand what conditions are on Niflheim, and how these Ullran native workers are employed; however, I'd better begin by explaining the purpose for which these nuclear bombs were designed and used. . ."

He smiled; she realized that he needed time to think, and she was stalling to provide it. He drew a pencil and pad toward him and began doodling in a bored manner, deliberately closing his mind to what she was saying. There were two assumptions, he considered: first, that King Orgzild already possessed a nuclear bomb which he could use when he chose, and, second, that in the absence of Dr. Gomes, such a bomb could only be produced on Gongonk Island after lengthy experimental work. If both of these assumptions were true, he had just heard the death-sentence of every Terran on Ullr. The first he did not for a moment doubt. The reasons for making it were too good. He dismissed it from further consideration and concentrated on the second.

". . . what's known as a Nagasaki-type bomb, the first type of plutonium-bomb developed," Paula was saying. "Really, it's a technological antique, but it was good enough for the purpose, and Dr. Gomes could build it with locally available materials. . ."

That was the crux of it. The plutonium bomb, from a military standpoint, was as obsolete as the flintlock musket had been at

the time of the Second World War. He reviewed, quickly, the history of weapons-development since the beginning of the Atomic Era. The emphasis, since the end of the Second World War, had all been on nuclear weapons and rocket-missiles. There had been the H-bomb, itself obsolescent, and the Bethecycle bomb, and the subneutron bomb, and the omega-ray bomb, and the negamatter bomb, and then the end of civilization in the Northern Hemisphere and the rise of the new civilization in South America and South Africa and Australia. Today, the small-arms and artillery his troops were using were merely slight refinements on the weapons of the First Century, and all the modern nuclear weapons used by the Terran Federation were produced at the Space Navy base on Mars, by a small force of experts whose skills were almost as closed to the general scientific and technical world as the secrets of a medieval guild. The old A-bomb was an historical curiosity, and there was nobody on Ullr who had more than a layman's knowledge of the intricate technology of modern nuclear weapons. There were plenty of good nuclear-power engineers on Gongonk Island, but how long would it take them to design and build a plutonium bomb?

. . . Gorkrink also has a good understanding of Lingua Terra," Paula was saying. "He and Dr. Murillo conversed bi-lingually, just as I've heard General von Schlichten and King Kankad talking to one another. I haven't any idea whether or not Gorkrink could read Lingua Terra, or, if so, what papers or plans he might have seen."

"Just a minute, Paula," he said. "Colonel Grinell, what does your branch have on this Gorkrink?"

"He's the son of King Orgzild, and the daughter of Prince Jurnkonk," Grinell said. "We knew he'd signed on for Nif, two years ago, but the story we got was that he'd fallen out of favor at court and had been exiled. I can see, now, that that was planted to mislead us. As to whether or not he can read Lingua Terra, my belief is that he can. We know that he can understand it when spoken. He could have learned to read at one of those schools Mohammed Ferriera set up, ten or fifteen years ago."

"And Dr. Gomes and Dr. Murillo and Dr. Livesey left papers and plans lying around all over the place," Paula added. "If he went to Niflheim as a spy, he could have copied almost anything."

"Well, there you have it," von

Schlichten said. "When Gorkrink found out that plutonium can be used for bombs, he began gathering all the information he could. And as soon as he got home, he turned it all over to Pappy Orgzild."

"That still doesn't mean that the Kee-geeks were able to do anything with it," Air-Commodore Hargreaves argued.

"I think it does," von Schlichten differed. "As soon as Orgzild would hear about the possibility of making a plutonium bomb, he'd set up an A-bomb project, and don't think of it in terms of the old First Century Manhattan Project. There would be no problem of producing fissionables—we've been scattering refined plutonium over this planet like confetti."

"Well, an A-bomb's a pretty complicated piece of mechanism, even if you have the plans for it," Kent Pickering said. "As I recall, there have to be several subcritical masses of plutonium, or U-235, or whatever, blown together by shaped charges of explosive, all of which have to be fired simultaneously. That would mean a lot of electrical fittings that I can't see these geeks making by hand."

"I can," Paula said. "Have you ever seen the work these native jewelers do? And didn't you tell me about a clockwork thing they have at the university, here, to show the apparent movements of the sun. . ."

"That's right," von Schlichten said. "And what they couldn't make, they could have bought from us; we've sold them a lot of electrical equipment."

"All right, they could have built an A-bomb," Buhrmann said. "But did they?"

"We assume they tried to. Gorkrink got back from Nif on the *Canberra*, three months ago," von Schlichten said. "If Orgzild decided to build an A-bomb, he wouldn't give the signal for this uprising until he either had one or knew he couldn't make one, and he wouldn't give up trying in only three months. Therefore, I think we can assume that he succeeded, and had succeeded at the time he sent Gorkrink here to get that four tons of plutonium we let him have, and, incidentally, to tell his ambassador to pass the word to have Sid Harrington poisoned according to plan."

"Then why didn't he just use it on us at the start of the uprising?" Meyerstein wanted to know.

"Why should he? Getting rid of us is only the first step in Orgzild's plan," Grinell said. "Back as far as geek history goes, the Kings of Keegark have been trying to conquer Konkrook

and the Free Cities and make themselves masters of the whole Takkad Sea area. Let Konkrook wipe us out, and then he can move in his troops and take Konkrook. Or, if we beat off the geeks here, as we seem to be doing, he can bomb us out and then move in on Konkrook. I think that as long as we're fighting, here, he'll wait. The more damage we do to Konkrook, the easier it'll be for him."

"Then we'd better start dragging our feet on the Konkrook front," Laviola said. "And get busy trying to build a bomb of our own."

Von Schlichten looked up at the big screen, on which the battle of Konkrook was being projected from an overhead pickup.

"I'll agree on the second half of it," von Schlichten said. "And we'll also have to set up some kind of security-patrol system against bombers from Keegark. And as soon as *Procyon* gets here, we'll have to send her out to hunt down and destroy those two Boer-class freighters, the *Jan Smuts* and the *Kruger*. And we'll have to arrange for protection of Kankad's Town; that's sure to be another of Orgzild's high-priority targets. As to the action against Konkrook, I'll rely on your advice, Them. Can we delay the fall of the city for any length of time?"

M'zangwe shook his head. "When we divert contragravity to security-patrol work, the ground action'll slow up a little, of course. But the geeks are about knocked out, now."

"The hell with it, then. I doubt if we'd be able to buy much time from Orgzild by delaying victory in the city, and we'll probably need the troops as workers over here." He turned to Pickering. "Dr. Pickering, what sort of a crew can you scrape together to design a bomb for us?" he asked.

"Well, there's Martirano, and Sternberg, and Howard Fu-Chung, and Piet van Reenen, and. . ." He nodded to himself. "I can get six or eight of them in here in about twenty minutes; I'll have a project set up and working in a couple of hours. There has to be somebody qualified on duty at the plant, all the time, of course, but. . ."

"All right; call them in. I want the bomb finished by yesterday afternoon. And everybody with you, and you, yourself, had better revert to civilian status. This isn't something you can do by the numbers, and I don't want anybody who doesn't know what it's all about pulling rank on your outfit. Go ahead, call in your gang, and let me know what you'll be able to do,

as soon as—sooner than—it's possible."

He turned to Hargreaves. "Les, you'll have charge of flying the security patrols, and doing anything else you can to keep Orgzild from bombing us before we can bomb him. You'll have priority on everything second only to Pickering."

Hargreaves nodded. "As you say, general, we'll have to protect Kankad's, as well as this place. It's about five hundred miles from here to Kankad's, and eight-fifty miles from Kankad's to Keegark. . ."

He stopped talking, to von Schlichten, and began muttering to himself, running over the names of ships, and the speeds and pay-load capacities of airboats, and distances. In about five minutes, he would have a program worked out; in the meantime, von Schlichten could only be patient and contain himself. He looked along the table, and caught sight of a thin-faced, saturnine-looking man in a green shirt with a colonel's three concentric circles marked on the shoulders in silver-paint. Emmett Pearson, the communications chief.

"Emmett," he said, "those orbiters you have strung around this planet, two thousand miles out, for telecast rebroadcast stations. How much of a crew could be put on one of them?"

Pearson laughed. "Crew of what, general? White mice, or trained cockroaches? There isn't room inside one of those things for anything bigger to move around."

"Well, I know they're automatic, but how do you service them?"

"From the outside. They're only ten feet through, by about twenty in length, with a fifteen-foot ball at either end, and everything's in sections, which can be taken out. Our maintenance-gang goes up in a thing like a small spaceship, and either works on the outside in spacesuits, or puts in a new section and brings the unserviceable one down here to the shops."

"Ah; and what sort of a thing is this small spaceship, now?"

"A thing like a pair of fifty-ton lorries, with airlocks between, and connected at the middle; airtight, of course, and pressurized and insulated like a spaceship. One side's living quarters for a six-man crew—sometimes the gang's out for as long as a week at a time—and the other side's a workshop."

That sounded interesting. With contragravity, of course, terms like "escape-velocity" and "mass-ratio" were of purely antiquarian interest.

"How long," he asked Pearson, "would it take to fit that vehicle with a full set of detection instruments—radar, infrared and ultraviolet vision, electron-telescope, heat and radiation detectors, the whole works—and spot it about a hundred to a hundred and fifty miles above Keegark?"

"That I couldn't say, general," Emmett Pearson replied. "It'd have to be a shipyard job, and a lot of that stuff's clear outside my department. Ask Air-Commodore Hargreaves."

"Les!" he called out. "Wake up, Les!"

"Just a second, general." Hargreaves scribbled frantically on his pad. "Now, he said, raising his head. "What is it, sir?"

"Emmett, here, has a junior-grade spaceship that he used to service those orbital telecast-relay stations of his. He'll tell you what it's like. I want it fitted with every sort of detection device that can be crammed into or onto it; and spotted above Keegark. It should, of course, be high enough to cover not only the Keegark area, but Konkrook, Kankad's, and the lower Hoork and Konk river-valleys."

"Yes, I get it." Hargreaves snatched up a phone, punched out a combination, and began talking rapidly into it in a low voice. After awhile, he hung up. "All right, Mr. Pearson—Colonel Pearson, I mean. Have your space-buggy sent around to the shipyard. My boys'll fix it up." He made a note on another piece of paper. "If we live through this, I'm going to have a couple of supra-atmosphere ships in service on this planet. . . Now, general; I have a tentative set-up. We're going to need the *Elmoran* for patrol work south and east of Konkrook, and the *Gaucho* and *Bushranger* to the north and north-east, based on Kankad's. We'll keep the *Aldebaran* at Kankad's, and use her for emergencies. And we'll have patrols of light contragravity like this." He handed a map, with red-pencil and blue-pencil markings, along to von Schlichten. "Red are Kankad-based; blue are Konkrook-based."

"That looks all right," von Schlichten said. "There's another thing, though. We want scout-vehicles to cover the Keegark area with radiation-detectors. These geeks are quite well aware of radiation-danger from fissionables, but they're accustomed to the ordinary industrial-power reactors, which are either very lightly shielded or unshielded on top. We want to find out where Orgzild's bomb-plant is."

"Yes, general; as soon as we can get radiation detectors sent out to Kankad's, we'll have a

couple of fast aircars fitted with them for that job."

"We have detectors, at our laboratory and reaction-plant," Kankad said. "And my people can make more, as soon as you want them." He thought for a moment. "Perhaps I should go to the town, now. I could be of more use there than here."

Kent Pickering, who had been talking with his experts at a table apart, returned.

"We've set up a program, general," he said. "It's going to be a lot harder than I'd anticipated. None of us seem to know exactly what we have to do in building one of those things. You see, the uranium or plutonium fission-bomb's been obsolete for over four hundred years. It was a classified-secret matter long after its obsolescence, because it hadn't been rendered any the less deadly by being superseded—there was that A-bomb that the Christian Anarchist Party put together at Buenos Aires in 378 A.E., for instance. And then, after it was declassified, it had been so far superseded that it was of only antiquarian interest; the textbooks dealt with it only in general terms. The principles, of course, are part of basic nuclear science; the secret of the A-bomb was just a bag of engineering tricks that we don't have, and which we will have to rediscover. Design of tampers, design of the chemical-explosive charges to bring subcritical masses together, case-design, detonating mechanism, things like that.

"The complete data on even the old Hiroshima and Nagasaki types is still in existence, of course. You can get it at places like the University of Montevideo Library, or Jan Smuts Memorial Library at Cape Town. But we don't have it here. We're detailing a couple of junior technicians to make a search of the library here on Gongonk Island, but we're not optimistic. We just can't afford to pass up any chance, even when it approaches zero-probability."

Von Schlichten nodded. "That's about what I'd expected," he said. "I suppose Gomes got his data out of one of the dustier storage-stacks at Jan Smuts or Montevideo, in the first place. . . Well, I still want that bomb finished by yesterday afternoon, but since that's impractical, you'll have to take a little—but as little as possible—longer."

"What are we going to do about publicity on this?" Howlett, the personnel man, asked. "We don't want this getting out in garbled form—

though how it could be made worse by garbling I couldn't guess—and having the troops watching the sky over their shoulders and going into a panic as soon as they saw something they didn't understand."

"No, we don't. I've seen a couple of troop-panics," von Schlichten said. "There can't be anything much worse than a panic."

"I think the Terrans ought to be told the worst," Hargreaves said. "And told that our only hope is to get a bomb of our own built and dropped first. As to the Kragans. . . What do you think, King Kankad?"

"Tell them that we are building a bomb to destroy Keegark; that we are running short of ammunition, and that it is our only hope of finishing the war before the ammunition is gone," Kankad said. "Tell them something of what sort of a bomb it is. But do not tell them that King Orgzild already has such a bomb. Old Kankad, who made me out of himself, told me about how our people fled in panic from the weapons of the Terrans, when your people and mine were still enemies. This thing is to the weapons they faced then as those weapons were to the old Kragans' spears and bows. . . And when the geeks from Grank come here, tell them that we are winning and that if they fight well, they can share the loot of Konkrook and Keegark."

Von Schlichten looked up at the big screen. Already, Themistocles M'zangwe had ordered the Channel Battery to reduce fire; the big guns were firing singly, in thirty-second-interval salvos. There was less bombing, too; contragravity was being drawn out of the battle.

"Well, we all have things to do," he said, "and I think we've discussed everything there is to discuss. Anybody think of anything we've forgotten? . . . Then we're adjourned."

He and Paula Quinton took the elevator to the roof, and sat side by side, silently watching the conflagration that was raging across the channel and the nearer flashes of the big guns along the island's city side.

"Wednesday night, I thought we were all cooked," Paula told him. "Cleaning up the North in two days seemed like an impossibility, too. Maybe you'll do it again."

"If I pull this one out of the fire, I won't be a general; I'll be a magician," he said. "Pickering'll be a magician, I mean; he's the boy who'll save our bacon, if it's saveable." He looked somberly across the flame-reflecting water. "Let's not kid ourselves; we're just kicking and



biting at the guards on the way up the gallows-steps."

"Well, why stop till the trap's sprung?" she asked. "What'll happen to these people on this planet, after we're atomized?"

"That I don't want to think about. Kankad's Town will get the second bomb; Orgzild won't dare leave the Kragans after he's wiped us out. Yoorkerk and Jonkvank, in the North, will turn on Keaveney and Shapiro and Karamessinis and Hid O'Leary and wipe them out. And when the next ship gets in here and they find out what happened, they'll send the Federation Space Navy, and this planet'll get it worse than Fenris did. They'll blast anything that has four arms and a face like a lizard. . ."

Half a dozen aircars lifted suddenly from the airport and streaked away to the north-east. As they went past, in the light of the burning city, he could see that at least three of them had multiple rocket-launchers on top. In a matter of seconds, a gun-cutter raced after them, and a second, which had been over Konkrook, jettisoned a bomb and turned away to follow.

"Maybe that's it," Paula said.

"Well, if it is, we won't be any better off anywhere else than here," he told her. "Let's stay where we are and watch."

After what seemed like a long time, however, a twinkle of lights showed over the East Konk Mountains. They weren't the flashes of explosions; some were magnesium flares, and some were the lights of a ship.

"That's *Procyon*, from Grank," he said. "Everybody gets a good mark for this—detection stations, interceptors, gun-cutters. If that had been it, there'd have been a good chance of stopping it." He felt better than he had since Pickering had told him that Lourenço Gomes was dead. "It's a good thing Gorkrink didn't pick up any dope on guided missiles, while he was at it. As long as they have to deliver it with contragravity, we have a chance."

They rose from the balustrade where they had been sitting, and, for the first time, he discovered that he had had his left arm over her shoulder and that she had had her right hand resting on the point of his right hip, just above his pistol. He picked up the folder of papers she had been carrying, and put her into the elevator ahead of him, and it was only when they parted on the living-quarters level that he recalled having followed the older protocol of gallantry rather than the precedence of military rank.

XII

He woke with a guilty start and looked up at the clock on the ceiling; it was 0945. Kicking himself free of the covers, he slid his feet to the floor and sprinted for the bathroom. While he was fussing to get the shower adjusted to the right temperature, he bludgeoned his conscience by telling himself that a wide-awake general is more good than a half-asleep general, that there was nothing he could do but hope that Hargreaves' patrols would keep the bomb away from Konkrook until Pickering's brain-trust came up with one of their own, and that the fact that the commander-in-chief was making sack-time would be much better for morale than the spectacle of him running around in circles. He shaved carefully; a stubble of beard on his chin might betray the fact that he was worried. Then he dressed, put his monocle in his eye, and called the headquarters that had been set up in Sid Harrington's—now his—office. A girl at the switchboard appeared on his screen, and gave place to Paula Quinton, who had been up for the past two hours.

"The *Northern Lights* got in about three hours ago, general," she told him. "She had four of King Yoorkerk's infantry regiments aboard—the Seventh, Glorious-and-Terrible, the Fourth, Firm-in-Adversity, the Second, Strength-of-the-Throne, and the Twelfth, Forever-Admirable. They're the sorriest looking rabble I ever saw, but Hideyoshi says they're the best Yoorkerk has, and they all have Terran-style rifles. General M'zangwe broke them into battalions, and put a battalion in with each of the Kragan regiments. I think they're more afraid of the Kragans than they are of the rebels."

He nodded. That was probably the best way to employ them, within the existing situation. The trouble was, Them M'zangwe was incurably tactical-minded. Put those geeks of Yoorkerk's in with the Kragans and they'd be most useful in conquering Konkrook, but the trouble was that, after associating with Kragans, they might develop into reasonably good troops, themselves, to the undesired improvement of King Yoorkerk's army. On the other hand, maybe not. Keep them in Company service long enough, and they might want to forget about Yoorkerk and stay there.

"How's the situation over in town?" he asked.

"Well, it's slowing up, since we began pulling contragravity out," she told him, "but the

geeks are breaking up rapidly. . . . Oh, there was something funny about that hassle, last evening, when the *Procyon* came in. Two contragravity vehicles, an aircar and an air-lorry, that went out to meet the ship, are unaccounted for."

"You mean two of our vehicles are missing?"

She shook her head, frowning in perplexity. "Well, no. All the vehicles that answered that unidentified-aircraft alert returned, but there were these two that went out that we haven't any record of. Colonel Grinell is investigating, but he can't find out anything. . ."

"Tell him not to waste any more time," he said. "Those two were probably geeks from Konkrook. You know, that's how the von Schlichten family got out of Germany, in the Year Three—flew a bomber to Spain. The Konkrook war-criminals are getting out before the Army of Occupation moves in."

"Well, the posts at the old Kragan castles report some contragravity, and parties riding 'saurs, moving west from the city," she told him. "There are a lot of refugees on the roads. And combat reports from Konkrook agree that resistance is getting weaker every hour. . . And the supra-atmosphere observation-craft — they're beginning to call her the *Sky-Spy*—is up a hundred and fifty miles over Keegark. We have radar and vision screens and telemetered radiation and other detectors here, tuned to her. They're installing a similar set on the *Northern Lights* at the shipyard. By the way, Air-Commodore Hargreaves wants to know if he can take a pair of 155-mm rifles from the Channel Battery and mount them on the *Lights*."

"Yes, of course; he can have anything he wants, as long as it isn't urgently needed for the bomb project."

"*Sky-Spy* reports normal contragravity traffic between Keegark and the farming-villages around—aircars, lorries, a few scows—but nothing suspicious. No trace of either of the Boer-class ships. Kankad's people are building receiving sets to install on the *Procyon* and the *Aldebaran*, and another set for Kankad's Town. Pickering and his people are still working, but they all look pretty frustrated. They have Major Thornton, at the ammunition plant, doing experimental work on chemical-explosive charges to bring the subcritical masses together and hold them together till an explosion can be produced; they're using most of the skilled electrical and electronics people to work up a det-

onating device. That's why Kankad's people are doing most of the detection-device work. Hargreaves is fitting a lot of small craft—combat-cars and civilian aircars—with radar sets, to use for patrolling."

"That sounds good," von Schlichten said. "I'll be around and see how things are, after I've had some breakfast."

He had breakfast at the main cafeteria, four floors down; there wasn't as much laughing and talking as usual, but the crowd there seemed in good spirits. He spent some time at headquarters, watching Keegark by TV and radar. So far, nothing had been done about direct reconnaissance over Keegark with radiation-detectors, but Hargreaves reported that a couple of privately-owned aircars were being fitted for the job.

He made a flying inspection trip around the island, and visited the farms south of the city, on the mainland, and, finally, made a sweep in his command-car over the city itself. Reconnaissance in person was an archaic and unprogressive procedure, and it was a good way to get generals killed, but one could see a lot of things that would be missed on TV. He let down several times in areas that had already been taken, and talked to company and platoon officers. For one thing, King Yoorkerk's flamboyantly-named regiments weren't quite as bad as Paula had thought. She'd been spoiled by the Kragans in her appreciation of other native troops. They had good, standard-quality, Volund-made arms; they were brave and capable; and they had been just enough insulted by being integrated into Kragan regiments to try to make a good showing.

By noon, resistance in the city was beginning to cave in. Surrender flags were appearing on one after another of the Konkrookan rebel strong-points, and at 1430, after he had returned to the Island, a delegation, headed by the Konkrookan equivalent of Lord Mayor and composed largely of prominent merchants, came across the channel under a flag of truce to surrender the city's Spear of State, with abject apologies for not having Gurgurk's head on the point of it. Gurgurk, they reported had fled to Keegark by air the night before, which explained the incident of the unaccountable aircar and lorry. The Channel Battery stopped firing, and, with the exception of an occasional spatter of small-arms fire, the city fell silent.

At 1600, von Schlichten visited the headquarters Pickering had

set up in the office building at the power-plant. As he stepped off the lift on the third floor, a girl, running down the hall with her arms full of papers in folders, collided with him; the load of papers flew in all directions. He stooped to help her pick them up.

"Oh, general! Isn't it wonderful?" she cried. "I just can't believe it!"

"Isn't what wonderful?" he asked.

"Oh, don't you know? They've got it!"

"Huh? They have?" He gathered up the last of the big envelopes and gave them to her. "When?"

"Just half an hour ago. And to think, those books were around here all the time, and. . . Oh, I've got to run!" She disappeared into the lift.

Inside the office, one of Pickering's engineers was sitting on the middle of his spinal column, a stenograph-phone in one hand and a book in the other. Once in a while, he would say something into the mouthpiece of the phone. Two other nuclear engineers had similar books spread out on a desk in front of them; they were making notes and looking up references in the *Nuclear Engineers' Handbook*, and making calculations with their slide-rules. There was a huddle around the drafting-boards, where two more such books were in use.

"Well, what's happened?" he demanded, catching Pickering by the arm as he rushed from one group to another.

"Ha! We have it!" Pickering cried. "Everything we need! Look!"

He had another of the books under his arm. He held it out to von Schlichten, and von Schlichten suddenly felt sicker than he had ever felt since, at the age of fourteen, he had gotten drunk for the first time. He had seen men crack up under intolerable strain before, but this was the first time he had seen a whole roomful of men blow their tops in the same manner.

The book was a novel—a jumbo-size historical novel, of some seven or eight hundred pages. Its dust-jacket bore a slightly - more - than - bust - length picture of a young lady with crimson hair and green eyes and jade earrings and a plunging—not to say power-diving—neckline that left her affiliation with the class of Mammalia in no doubt whatever. In the background, a mushroom-topped smoke-column rose, and away from it something intended to be a four-motor propeller-driven bomber of the First Century was racing madly. The title, he

saw, was *Dire Dawn*, and the author was one Hildegarde Hernandez.

"Well, it has a picture of an A-bomb explosion on it," he agreed.

"It has more than that; it has the whole business. Case specifications, tampers, charge design, detonating device, everything. Why, end-papers even have diagrams; copies of the original Nagasaki-bomb drawing. Look."

Von Schlichten looked. He had no more than the average intelligent layman's knowledge of nuclear physics—enough to recharge or repair a conversion-unit—but the drawings looked authentic enough. They seemed to be copies of ancient blueprints, lettered in First Century English, with Lingua Terra translations added, and marked TOP SECRET and U. S. ARMY CORPS OF ENGINEERS and MANHATTAN ENGINEERING DISTRICT.

"And look at this!" Pickering opened at a marked page and showed it to him. "And this!" He opened where another slip of paper had been inserted. "Everything we want to know, practically."

"I don't get this." He wasn't sick, any more; just bewildered. "I read some reviews of this thing. All the reviewers panned hell out of it—'World War II Through a Bedroom Keyhole'; 'Henty in Black Lace Panties'—that sort of thing."

"Yeh, yeh, sure," Pickering agreed. "But this Hernandez has illusions of being a great serious historical novelist, see. She won't try to write a book till she's put in years of research—actually, about six months' research by a herd of librarians and college-juniors and other such literary coolies—and she boasts that she never yet has been caught in an error of historical background detail.

"Well, this opus is about the old Manhattan Project. The heroine is a sort of super-Mata-Hari, who is, alternately and sometimes simultaneously, in the pay of the Nazis, the Soviets, the Vatican, Chiang Kai-Shek, the Japanese Emperor, and the Jewish International Bankers, and she has affairs with everybody from Joe Stalin to Joe McCarthy, and of course, she is in on every step of the A-bomb project. She even manages to stow away on the *Enola Gay*, with the help of a general she's spent fifty incandescent pages seducing.

"In order to tool up for this production-job, La Hernandez did her researching just where Lourenço Gomes probably did his —University of Montevideo Li-

brary. She even had access to the photostats of the old U. S. data that General Lanningham brought to South America after the debacle in the United States in A.E. 114. Those end-papers are part of the Lanningham stuff. As far as we've been able to check mathematically, everything is strictly authentic and practical. We'll have to run a few more tests on the chemical-explosive charges—we don't have any data on the exact strength of the explosives they used then—and the tampers and detonating device will need to be tested a little. But in about half an hour, we ought to be able to start drawing plans for the case, and as soon as they're finished, we'll rush them to the shipyard foundries for casting."

Von Schlichten handed the book back to Pickering, and sighed deeply. "And I thought everybody here had gone off his rocker," he said. "We will erect, on the ruins of Keegark, a hundred-foot statue of Señorita Hildegrade Hernandez. . . How did you get onto this?"

Pickering pointed to a young man with dull brick colored hair, who was punching out some kind of a problem on a small computing machine.

"Piet van Reenen, over there; he has a girl-friend whose taste runs to this sort of literary bubble-gum. She told him it was all in a book she'd just read, and showed him. We descended in force on the bookshop and grabbed every copy in stock. We are now running a sort of gaseous-diffusion process, to separate the nuclear physics from the pornography. I must say, Hildegarde has her biological data very well in hand, too."

"I'll bet she'd have fun writing a novel about these geeks," von Schlichten said. "Well, how soon do you think you can have a bomb made up and all ready for us?"

"Casting the cases is going to slow us down the most," Pickering said. "But, even with that, we ought to have one ready in three days, at the most. By two weeks, we'll be turning them out on an assembly-line."

"I hope we don't need more than one. But you'd better produce at least half a dozen. And have some practice-bombs made up, out of concrete or anything, as long as they're the right weight and airfoil and have some way of releasing smoke. Get them done as soon as you have your case designed. We want to be able to make a couple of practice drops."

There was no use, he thought, of raising hopes which might prove premature. He told Paula

Quinton, of course, and Themistocles M'zangwe, and, by telecast on sealed beam, King Kankad and Air-Commodore Hargreaves. Beyond that, there was nothing to do but wait, and hope that Hargreaves could keep Orgzild's bombers away from Gongonk Island and Kankad's Town and that Hildegarde Hernandez had been playing fair with her public. He visited the city, where a few pockets of die-hard resistance were being liquidated, and where everybody who had not been too deeply and publicly involved in the *znidd suddabit* conspiracy was now coming forward and claiming to have been a lifelong friend of the Terrans and the Company. Von Schlichten returned to Gongonk Island, debating with himself whether to declare a general amnesty or to set up a dozen guillotines in the city and run them around the clock for a week. There were cogent arguments for and against either procedure.

By 2100, the last organized resistance had been wiped out, a curfew had been imposed, and peace of a sort restored. There was still the threat from Keegark, but it was looking less ominous now than it had the evening before. Von Schlichten and Paula were having dinner in the Broadway Room, confident that there was nothing left to do that they could do anything about, when the extension phone that had been plugged in at their table rang.

"Colonel Quinton here," Paula identified herself into it, and listened for a moment. "There has? When? . . . Well, where did it come from? . . . I see. And the direction? . . . Anything else?"

Apparently there was nothing else. She hung up, and turned to von Schlichten.

"The *Sky-Spy* just detected a ship lifting out from Keegark, presumed one of the Boer-class freighters, either the *Jan Smuts* or the *Oom Paul Kruger*. It was first picked up on contragravity at about a hundred feet, rising vertically from near the Palace. The supposition is the geeks had her camouflaged since the time Commander Prinsloo first bombarded Keegark with the *Aldebaran*. That was about twenty minutes ago; at last report, she's fifty miles north of Keegark, headed up the Hoork River."

Von Schlichten started thinking aloud: "That could be a feint, to draw our ships north after her, and leave the approach to Konkrook or Kankad's open, but that would be presuming that they know about the *Sky-Spy*, and I doubt that, though

not enough to take chances on. They know we have ground- and ship-radar, and they may think they can slip down the Konk Valley either undetected or mistaken for one of our ships from North Ullr."

He picked up the phone. "Get me through on telecast to Air-Commodore Hargreaves, aboard the *Procyon*," he said. "I'll take it in the office; I'll be up directly." He rose. "Finish your dinner, and have the rest of mine sent up," he told Paula.

Leaving the elevator, he rushed into the big headquarters room just as contact was established with the *Procyon*, on station over the north-western corner of Takkad Sea, between Kankad's Town and Keegark. The *Aldebaran*, he knew, was west of Keegark; the *Northern Lights*, now fitted with a pair of 155-mm guns, in addition to her 90's, had just arrived at Kankad's. He had the *Aldebaran* sent north along the crest of the mountain-range between the Hoork and Konk river-valleys, where she could cover both with her own radar and other detection-devices and exchange information with the *Sky-Spy*, and the *Gaucho* sent in what looked like the right course to intercept the Boer-class freighter from Keegark. The *Northern Lights*, also with screens tuned to the *Sky-Spy*, was sent to take over the *Aldebaran's* regular station. Finally, he called Skilk and had the *Northern Star* sent south down the Hoork Valley.

After that, there was nothing to do but wait, and watch the screens. Paula Quinton put in an appearance shortly after he had finished calling Skilk, pushing a cocktail-wagon on which their interrupted dinners had been placed. They finished eating, and drank coffee, and smoked. Most of the rest of his staff who were not busy on the bomb-project or at the shipyards or with the occupation of Konkrook drifted in; they all sat and stared from one to another of the screens, which told, in radar-patterns and direct vision and telescopic vision and heat and radiation detection, the story of what was going on to the north-east of them.

Keegark was dark, on the vision-screen; evidently King Orgzild had invented the blackout, too. Not that it did him any good; the radar-screen showed the city clearly, and it was just as clear on the radiation and heat screens. The Keegarkan ship was completely blacked out, but the radiations from her engines and the distinctive radiation-pattern of her contragravity-field showed clearly, and

there was a speck that marked her position on the radar-screen. The same position was marked with a pin-point of light on the vision screen—some device on *Sky-Spy*, synchronized with the detectors, kept it focused there. The Company ships and contragravity vehicles all were carrying topside lights, visible only from above, which flashed alternate red and blue to identify them.

Time crawled slowly around the clock-face on the wall, the sixty-five-second minutes of Ullr dragging like hours. The spots that marked the enemy ship and her hunters crawled, too; seen from the hundred-and-fifty-mile altitude of the *Sky-Spy*, even the six-hundred-mile speed of the *Gaucho* was barely visible. They drank coffee till the stuff revolted them; they smoked until their throats and mouths were dry, they watched the screens until they thought that they would see them in their dreams forever. Then the *Gaucho* reported radar-contact with the Keegarkan ship, which had begun to turn in a hairpin-shaped course and was coming south down the Konk Valley.

After that, the *Goucho* began reporting directly, and her topside identification-light went out.

". . . doused our lights; we're down in the valley, altitude about a thousand feet. We're trying to get a glimpse of her against the sky," a voice came in. "We're cutting in our forward TV-pick-up." The voice repeated, several times, the wavelength, and somebody got an auxiliary screen tuned in. There was nothing visible in it but the darkness of the valley, the star-jeweled sky, and the loom of the East Konk Mountains. "We still can't see her, but we ought to, any moment; radar shows her well above the mountains. Ah, there she is; she just obscured Beta Hydrae V; she's moving toward that big constellation to the east of it, the one they call Finnegan's Goat. Now she'll be right in the center of the screen; we're going straight for her. We're going to try to slow her down till *Aldebaran* can get here. . ."

The enemy ship was vaguely visible, now, becoming clearer in the starlight. She was a Boer-class freighter, all right. Probably the *Jan Smuts;* the *Oom Paul Kruger* had last been reported at Bwork, and there was little chance that she had slipped into Keegark since the uprising had started. For all anybody knew, she could have been destroyed in the fighting before the Bwork Residency fell.

"All right, we have her spotted; we're going to open up on

her," the voice from the *Gaucho* announced. "She has two 90's to our one; we'll try to disable them, first." The vision-screen lit with the indirect glare of the gun-flash, and the image in it jiggled violently as the ship shook to the recoil, then steadied again, with the enemy ship visible in the middle of it, growing larger and larger as the *Gaucho* rushed toward her. The gun fired again and again, flooding the screen with momentary yellow light and disturbing the image as the recoil shook the gun-cutter. The enemy ship began firing in reply; the shots were all wide misses. Apparently the geek gun-crew didn't know how to synchronize the radar sights, and were ignorant of the correct setting for the proximity-fuzes. The *Gaucho's* searchlights came on, bathing her quarry in light. It was the *Jan Smuts;* the name, and the figurehead-bust of the old soldier-philosopher, were plainly visible. Her forward gun had been knocked out, and she was trying to swing about to get a field of fire for her stern-gun.

"We're going to give her a rocket-salvo," the voice said. "Watch this, now!"

The rockets leaped forward, from the topside racks, four and four and four•and four, at half-second intervals. The first four hit the *Smuts* amidships and low, exploding with a flare that grew before it could die away as the second four landed. Nobody ever saw the third and fourth four land. The *Jan Smuts* vanished in a blaze of light that blinded everybody in the room; when they could see again, after some thirty seconds, the screen was dark.

In the direct-vision screen from the *Sky-Spy,* the whole countryside of the Konk Valley, five hundred miles north of Konkrook, was lighted. The heat and radiation detectors were going insane. And in the shifting confusion on the radar-screen, there was no trace either of the *Jan Smuts* or the *Gaucho.*

"Well, the geeks did have an A-bomb," Themistocles M'zangwe said, at length. "I'd been trying to kid myself that we were just preparing against a million-to-one chance. I wonder how many more they have."

"Paula, find out who was in command of the *Gaucho;* he'd be a junior-grade lieutenant. Fix up orders promoting him to navy captain, as of now. It's probably the only thing we can do for him, any more. And promotions of the same order for everybody else aboard that cutter. Authority Carlos von Schlichten, acting Governor-General." He picked up a phone. "Get me Commander

Prinsloo, on *Aldebaran*. . ."

He ordered Prinsloo to launch airboats and make a search; cautioned him to be careful of radiation, but to take no chances on any of the *Gaucho's* complement being still alive and in need of help. While that was going on, the *Sky-Spy* reported another ship coming over her horizon to the east, from the direction of Bwork. That would be the *Oom Paul Kruger*. Hargreaves had already learned of the advent of the second freighter. He was unwilling to take the *Procyon* off her station until the *Aldebaran* returned from the Konk Valley. In this, von Schlichten concurred.

Somebody suggested that a drink would be in order. They had just watched the all-but-certain death of three Terran officers, fifteen Terran airmen, and ten Kragans, but they had all been living in too close companionship with death in the past three days— or was it three centuries—to be too deeply affected. And they had also watched, at least for a day or so, the removal of the threat that had hung over their heads. And they had seen proof that they had a defense against King Orgzild's bombs.

They were still mixing cocktails when Pickering phoned in.

"Some good news, general, from Operation 'Hildegarde.' We ought to have at least one bomb ready to drop by 1500 tomorrow; four or five more by next midnight," he said. "We don't need to have cases cast. We got our dimensions decided, and we find that there are a lot of big empty liquid-oxygen flasks, or tanks, rather, at the spaceport, that'll accommodate everything — fissionables, explosive-charges, tampers, detonator, and all."

"Well, go ahead with it. Make up a few of them; as many as you can between now and 2400 Sunday." He thought for a moment. "Don't waste time on those practice bombs I mentioned. We'll make a practice drop with a live bomb. And don't throw away the design for the cast case. We may need that, later on."

XIII

The Company fleet hung off Keegark, at fifteen thousand feet, in a belt of calm air just below the seesawing currents from the warming Antarctic and the cooling deserts of the Arctic. There was the *Procyon*, from the bridge of which von Schlichten watched the movements of the other ships and airboats and the distant horizon. The *Aldebaran* was ten miles off, to the west, her metal sheathing glinting the red light of the evening sun.

There was the *Northern Star,* down from Skilk, a smaller and more distant twinkle of reflected light to the north of *Aldebaran.* The *Northern Lights* was off to the east, and between her and *Procyon* was a fifth ship; turning the arm-mounted binoculars around, he could just make out, on her bow, the figurehead bust of a man in an ancient top-hat and a fringe of chin-beard. She was the *Oom Paul Kruger,* captured by the *Procyon* after a chase across the mountains north-east of Keegark the day before. And, remote from the other ships, to the south, a tiny speck of blue-gray, almost invisible against the sky, and a smaller twinkle of reflected sunlight —a garbage-scow, unflatteringly but somewhat aptly rechristened *Hildegarde Hernandez,* which had been altered as a bomb-carrier, and the gun-cutter *Elmoran.* With the glasses, he could see a bulky cylinder being handled off the scow and loaded onto the improvised bomb-catapult on the *Elmoran's* stern. Shortly thereafter, the gun-cutter broke loose from the tender and began to approach the fleet.

"General, I must protest again against your doing this," Air-Commodore Hargreaves said. "There's simply no sense in it. That bomb can be dropped without your personal supervision aboard, sir, and you're endangering yourself unnecessarily. That infernal-machine hasn't been tested or anything; it might even let go on the catapult when you try to drop it. And we simply can't afford to lose you, now."

"No, what would become of us, if you go out there and blow yourself up with that contraption?" Buhrmann supported him. "My God, I thought Don Quixote was a Spaniard, instead of a German!"

"Argentino," von Schlichten corrected. "And don't try to sell me that Irreplaceable-Man, either. Them M'zangwe can replace me, Hid O'Leary can replace him, Barney Mordkovitz can replace him, and so on down to where you make a second lieutenant out of some sergeant. We've been all over this last evening. Admitted we can't take time for a long string of test-shots, and admitted we have to use an untested weapon; I'm not sending men out under those circumstances and staying here on this ship and watch them blow themselves up. If that bomb's our only hope, it's got to be dropped right, and I'm not going to take a chance on having it dropped by a crew who think they've been sent out on a suicide mission. What happened to the *Gaucho* when she blew the *Smuts* up is too fresh in everybody's mind.

But if I, who ordered the mission, accompany it, they'll know I have some confidence that they'll come back alive."

"Well, I'm coming along, too, general," Kent Pickering spoke up. "I made the damned thing, and I ought to be along when it's dropped, on the principle that a restaurant-proprietor ought to be seen eating his own food once in a while."

"I still don't see why we couldn't have made at least one test shot, first," Hans Meyerstein, the Banking Cartel man, objected.

"Well, I'll tell you why," Paula Quinton spoke up. "There's a good chance that the geeks don't know we have a bomb of our own. They may believe that it was something invented on Niflheim for mining purposes, and that we haven't realized its military application. There's more than a good chance that the loss of the *Jan Smuts* has temporarily demoralized them. Personally, I believe that both King Orgzild and Prince Gorkrink were aboard her when she blew up. That's something we'll never know, positively, of course. That ship and everything and everybody in her were simply vaporized, and the particles are registering on our geigers now. But I'm as sure as I am of anything about these geeks that one or both of them accompanied her."

"Paula knows what she's talking about," King Kankard jabbered in the Takkad Sea language which they all understood. "Just like Von saying that he has to go on our cutter, to encourage the crew. They always insist that their kings and generals go into battle, particularly if something important is to be done. They think the gods get angry if they don't."

"And we have to hit them now," von Schlichten said. "They still have a couple of bombs left. We haven't been able to locate them with detectors, but those geeks Kankad's men caught on that commando-raid, last night, say that there were at least three of them made. We can't take a chance that some fanatic may load one into an aircar and make a kamikaze-raid on Gongonk Island."

The *Elmoran* ran alongside, with her Masai-warrior figurehead and the black cylinder on her catapult aft. Somebody had painted, on the bomb: DIRE DAWN *by Hildegarde Hernandez. Compliments of the author to H. M. King Orgzild of Keegark.* A canvas-entubed gangway was run out to connect the ship with the cutter. Von Schlichten and Kent Pickering went down

the ladder from the bridge, the others accompanying them. As he stepped into the gangway, Paula Quinton fell in behind him.

"Where do you think you're going?" he demanded.

"Along with you," she replied. "I'm your adjutant, I believe."

"You definitely are not going along. Personally, I don't believe there's any danger, but I'm not having you run any unnecessary risks. . ."

"Von, I don't know much about the way Terrans think, except about fighting and about making things," Kankad told him. "And I don't know anything at all about the kind of Terrans who have young. But I believe this is something important to Paula. Let her go with you, because if you go alone and don't come back I don't think she will ever be happy again."

He looked at Kankad curiously, wondering, as he had so often before, just what went on inside that lizzard-skull. Then he looked at Paula, and, after a moment, he nodded.

"All right, colonel; objection withdrawn," he said.

Aboard the *Elmoran*, they gave the bomb a last-minute inspection and checked the catapult and the bomb-sight, and then went up on the bridge.

"Ready for the bombing mission, sir?" the skipper, a Lieutenant (j.g.) Morrison, asked.

"Ready if you are, Lieutenant. Carry on; we're just passengers."

"Thank you, sir. We'd thought of going in over the city at about five thousand for a target-check, turning when we're half way back to the mountains, and coming back for our bombing-run at fifteen thousand. Is that all right, sir?"

Von Schlichten nodded. "You're the skipper, lieutenant. You'd better make sure, though, that as soon as the bomb-off signal is flashed, your engineer hits his auxiliary rocket-propulsion button. We want to be about fifteen miles from where that thing goes off."

The lieutenant (j.g.) muttered something that sounded unmilitarily like, "You ain't foolin', brother!"

"No, I'm not," von Schlichten agreed. "I saw the *Jan Smuts* on the TV-screen."

The *Elmoran* pointed her bow, and the long blade of the figurehead warrior's spear, toward Keegark. The city grew out of the ground-mist, a particolored blur at the delta of the dry Hoork River, and then a color-splashed triangle between the river and the bay and the hills on the landward side, and then it took shape, cross-ruled with

streets and granulated with buildings. As they came in, von Schlichten, who had approached it from the air many times before, could distinguish the landmarks—the site of King Orgzild's nitroglycerine plant, now a crater surrounded by a quarter-mile radius of ruins; the Residency, another crater since Rodolfo MacKinnon had blown it up under him; the smashed *Christian De Wett* at the Company docks; King Orgzild's palace, fire-stained and with a hole blown in one corner by the *Aldebaran's* bombs. . . Then they were past the city and over open country.

"I wish we had some idea where the rest of those bombs are stored, sir," Lieutenant Morrison said. "We don't seem to have gotten anything significant when we flew reconnaissance with the radiation detectors."

"No; about all that was picked up was the main power-plant, and the radiation-escape from there was normal," Pickering agreed. "The bombs themselves wouldn't be detectable, except to the extent that, say, a nuclear-conversion engine for an airboat would be. They probably have them underground, somewhere, well shielded."

"Those prisoners Kankad's commandos dragged in only knew that they were in the city somewhere," von Schlichten considered. "How about midway between the Palace and the Residency for our ground-zero, lieutenant? That looks like the center of the city."

The cutter turned and started back, having risen another ten thousand feet. Morrison passed the word to the bombardier. The city, with the sea beyond it now, came rushing at them, and von Schlichten, standing at the front of the bridge, discovered that he had his arm around Paula's waist and was holding her a little more closely than was military. He made no attempt to release her, however.

"There's nothing to worry about, really," he was assuring her. "Pickering's boys built this thing according to the best principles of engineering, and the stuff they got out of that big-economy-size shilling-shocker all checked mathematically. . ."

The red light on the bridge flashed, and the intercom shouted "*Bomb off!*" He forced Paula down on the bridge deck and crouched beside her.

"Cover your eyes," he warned. "You remember what the flash was like in the screen, when the *Jan Smuts* blew up. And we didn't get the worst of it; the pickup on the *Gaucho* was knocked out too soon."

He kept on lecturing her about

gamma-rays and ultraviolet rays and X-rays and cosmic rays, trying to keep making some sort of intelligent sounds while they clung together and waited, and, with the other half of his mind, trying not to think of everything that could go wrong with that jerry-built improvisation they had just dumped onto Keegark. If it didn't blow, and the geeks found it, they'd know that another one would be along shortly, and. . .

An invisible hand caught the gun-cutter and hurled her end-over-end, sending von Schlichten and Paula sprawling at full length on the deck, still clinging to one another. There was a blast of almost palpable sound, and a sensation of heat that penetrated even the airtight superstructure of the *Elmoran*. An instant later, there was another, and another, similar shock. Two more bombs had gone off behind them; in Keegark; that meant that they had found King Orgzild's remaining nuclear armament. There were shattering sounds of breaking glass, and heavy thumps that told of structural damage to the cutter, and hoarse shouts, and lurid cursing as Morrison and his airmen struggled with the controls. The cutter began losing altitude, but she was back on a reasonably even keel. Von Schlichten rose, helping Paula to her feet, and found that they had been kissing one another passionately. They were still in each other's arms when the pitching and rolling of the cutter ceased and somebody tapped him on the shoulder.

He came out of the embrace and looked around. It was Lieutenant (j.g.) Morrison.

"What the devil, lieutenant?" he demanded.

"Sorry to interrupt, sir, but we're starting back to *Procyon*. And here; you'll want this, I suppose." He held out a glass disc. "I never expected to see it, but at that it took three A-bombs to blow you loose from your monocle."

"Oh, that?" Von Schlichten took his trade mark and set it in his eye. "I didn't lose it," he lied. "I just jettisoned it. Don't you know, lieutenant, that no gentleman ever wears a monocle while he's kissing a lady?"

He looked around. They were at about eight hundred to a thousand feet above the water, with a stiff following wind away from the explosion area. The 90-mm gun, forward, must have been knocked loose and carried away; it was gone, and so was the TV-pickup and the radar. Something, probably the gun, had slammed against the front of the bridge—the metal skeleton

was bent in, and the armor-glass had been knocked out. The cutter was vibrating properly, so the contragravity-field had not been disturbed, and her jets were firing.

"It was the second and third bombs that did the damage, sir," Morrison was saying. "We'd have gone through the effects of our own bomb with nothing more than a bad shaking—of course, on contragravity, we're weightless relative to the air-mass, but she was built to stand the winds in the high latitudes. But the two geek bombs caught us off balance. . ."

"You don't need to apologize, lieutenant. You and your crew behaved splendidly, lieutenant-commander; best traditions, and all that sort of thing. It was a pleasure, commander; hope to be aboard with you again, captain."

They found Kent Pickering at the rear of the bridge, and joined him, looking astern. Even von Schlichten, who had seen H-bombs and Bethe-cycle bombs, was impressed. Keegark was completely obliterated under an outward-rolling cloud of smoke and dust that spread out for five miles at the bottom of the towering column.

There had been a hundred and fifty thousand people in that city, even if their faces were the faces of lizards and they had four arms and quartz-speckled skins. What fraction of them were now alive, he could not guess. He had to remind himself that they were the people who had burned Eric Blount and Hendrik Lemoyne alive; that two of the three bombs that had contributed to that column of boiling smoke had been made in Keegark, by Keegarkans, and that, with a few casual factors altered, he was seeing what would have happened to Konkrook. Perhaps every Terran felt a superstitious dread of nuclear energy turned to the purposes of war; small wonder, after what they had done on their own world.

For one thing, he thought grimly, the next geek who picks up the idea of soaking a Terran in thermoconcentrate and setting fire to him will drop it again like a hot potato. And the next geek potentate who tries to organize an anti-Terran conspiracy, or the next crazy caravan-driver who preaches *znidd sud-dabit,* will be lynched on the spot. But this must be the last nuclear bomb used on Ullr. . .

Drunkard's morning-after resolution! he told himself contemptuously. The next time, it will come easier, and easier still the time after that. After you drop the first bomb, there is no turning back, any more than

there had been after Hiroshima, four-hundred-and-fifty-odd years ago. Why, he had even been considering just where, against the mountains back of Bwork, he would drop a demonstration bomb as a prelude to a surrender demand.

You either went on to the inevitable catastrophe, or you realized, in time, that nuclear armament and nationalism cannot exist together on the same planet, and it is easier to banish a habit of thought than a piece of knowledge. Ullr was not ready for membership in the Terran Federation; then its people must bow to the Terran Pax. The Kragans would help—as proconsuls, administrators, now, instead of mercenaries. And there must be manned orbital stations, and the Residencies must be moved outside the cities, away from possible blast-areas. And Sid Harrington's idea of encouraging the natives to own their contragravity-ships must be shelved, for a long time to come. Maybe, in time . . .

Kankad had a good idea, at that; a most meritorious idea. He was sold on it, already, and he doubted if it would take much salesmanship with Paula, either. Already, she was clinging to his arm with obvious possessiveness. Maybe their grandchildren, and the Kankad of that time, would see Ullr a civilized member of the Federation. . .

They paused, as the gun-chatter nuzzled up to the *Procyon* and the canvas-entubed gangway was run out and made fast, looking back at the fearful thing that had sprouted from where Keegark had been.

"You know," Paula was saying, echoing his earlier thought, "but for the female pornographer, that would have been Konkrook."

He nodded. "Yes. I hope you won't mind, but there will always be a place in my heart for Hildegarde."

Then they turned their backs upon the abomination of Keegark's desolation and went up the gangway together, looking very little like a general and his adjutant.

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The date will be Labor Day Week-end, as usual. The place will be the beautiful Bellevue-Stratford Hotel. This should prove convenient to all afficionados. The hotel is well equipped to handle all the needs of as large a crowd as will undoubtedly turn out, and the rates are reasonable for a first-class hotel; these rates, incidentally, have been guaranteed to the Convention Committee, and there will be no last-minute upward revisions!

But all this is already covered fully in the first Progress Bulletin, currently off the presses and ready to be sent to all who have not yet received it. It will give full details on rates, including where to register, and what you will find. A highly attractive bulletin, one that speaks well for the success of the Convention.

To get this—and the other bulletins, which will keep you fully informed and save no end of last-day trouble—all you have to do is to send one dollar for your Membership. For this, you'll receive a membership card, the bulletins, a listing of your name as a member, and all the cooperation the Committee can give on your problems. It's a bargain!

It will also help the Committee if you'll attend to this early. The expenses don't wait until the last day, and they have to be met. The labor is all voluntary. For those of us who can't help actively in other ways, this chance to contribute—and help ourselves at the same time—should be a must.

Mail your dollar to The Convention Committee, Eleventh World Science Fiction Convention, Box 2019, Middle City Station, Philadelphia 3, Penna.

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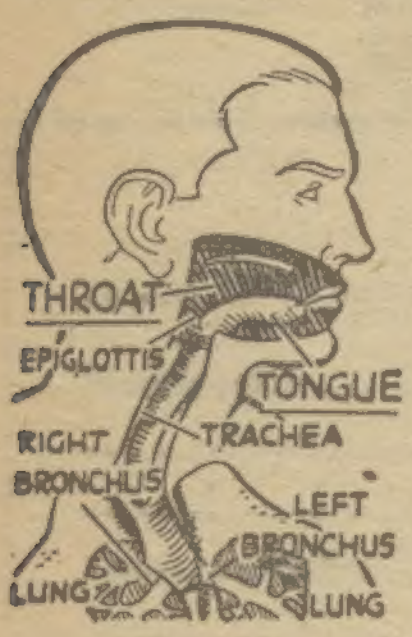
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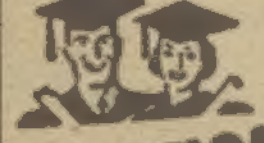
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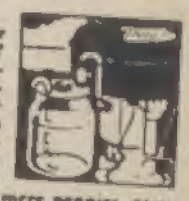
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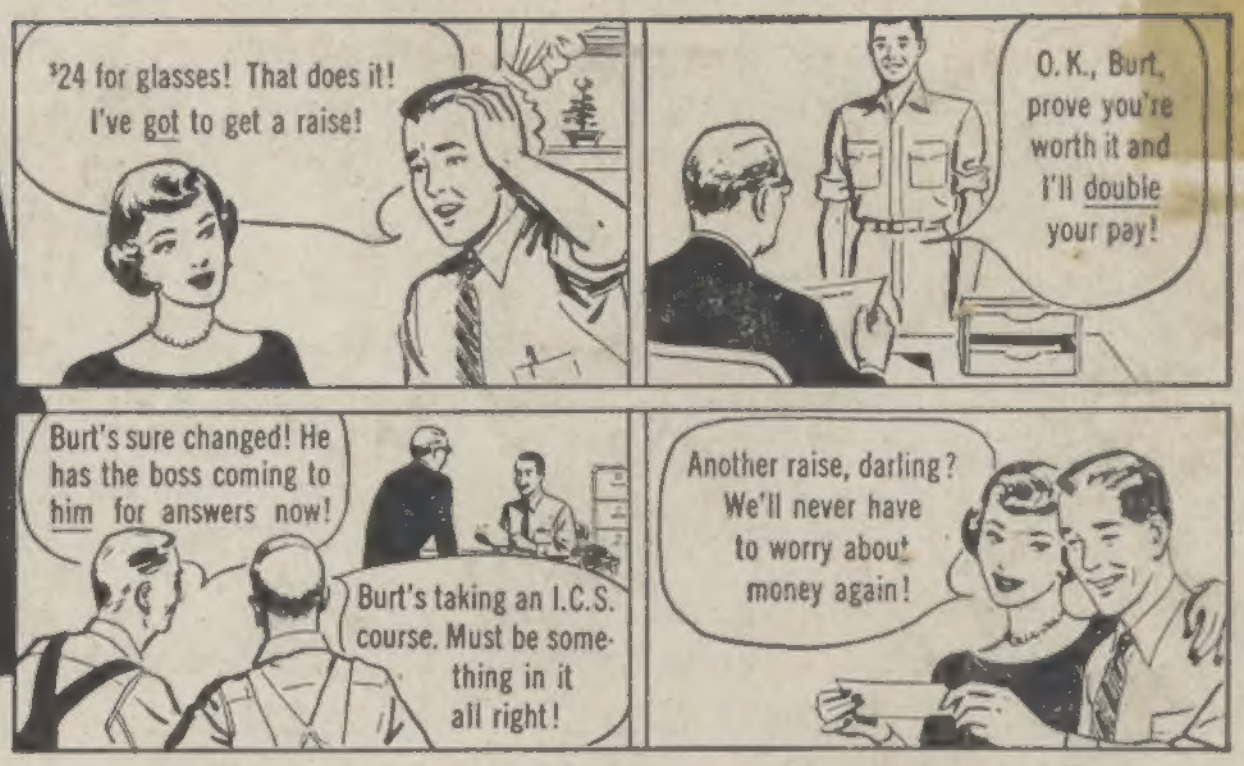
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